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SPATIAL STORYTELLING AS A CONVERGENCE OF E-LEARNING, VIDEO GAMES, ARCHAIC, AND IMMERSIVE JOURNALISM

Abstract. This study explores the convergence of video games, game-based learning (GBL), and immersive journalism through various storytelling models, including Joseph Campbell's Hero's Journey. Convergence is examined from multiple perspectives: technical, economic, legal, organizational, and conceptual. The study emphasizes the dual nature of convergence: natural, which is inherent to human nature and social information, and artificial, which is driven by informatization. The research identifies a conceptual convergence that is rooted in universal narrative paradigms and human psychology, largely propelled by technological advancements. This convergence blends artificial and natural systems of information and storytelling. Education, journalism, and games, all communication processes and archaic mythology, share a common goal: to influence their audiences in order to shape perceptions and conclusions about the world. The tools for this influence are storytelling and engagement. With the rise of information integration technologies, these previously independent fields are beginning to converge. Many educational courses tend to follow linear storytelling, which can limit the transformation of knowledge and reflect the increasing influence of business values within education. In contrast, immersive journalism employs spatial storytelling to highlight overlooked events, challenging traditional storytelling formats. Immersive technologies have the potential to transform education by shifting the focus from a linear credit-module approach to a value-oriented education centred on the concept of the "return of the hero." The study proposes the social cycle of storytelling and presents a convergent model of immersive spatial storytelling, based on the hero's journey. It has been observed that the convergence of game learning and immersive journalism aims for a new quality informed by transformative theory.

Keywords: spatial storytelling; a convergence; game-based learning; archaic; immersive journalism; video games; ICT in education

Statement and substantiation of the urgency of the problem. New opportunities for generating and processing information, which opens up the relentless development of the techno sphere of the information society (Webster, 2014). (Goldman & Scardamalia, 2013), (Muzzio & Gama, 2024), encourage the search for innovations of knowledge transfer, their assimilation in the context of pedagogy, journalism, infotainment, and entertainment, in particular, the video game industry. The common issues of involving recipients in their narratives and influencing them for different purposes unite these fields. All this leads to the convergence of e-learning, immersive journalism, and video games through the search for the most effective methods and technologies of storytelling. This convergence creates a new paradigm for communication, learning, and interaction based on combining ancient and modern storytelling techniques with cutting-edge technology, creating a new, immersive environment where stories become more interactive, visual, informative, and impactful.

The need to research trends in convergence, trans- and interdisciplinary is emphasized by the requirements of the Education 4.0 and STEAM concepts. These learning concepts emphasize the importance of developing communicative competencies in a highly technological robotic virtual cross-media space with an emphasis on the diverse individual needs of the student throughout life (Education 4.0, 2022). STEAM education integrates "Science, Technology, Engineering, the Arts, and Mathematics as access points for guiding student inquiry, dialogue, and critical thinking". Thus, this approach reinforces the need to combine e-learning, video games, and immersive journalism (What is STEAM Education? The definitive guide for K-12 schools, 2022).

A vivid example of the convergence of educational practices and video games is the direction of game-based learning (GBL), a notable feature of which is the use of mechanisms and principles of computer games in educational design and teaching methods (Gee, 2003), (Luhova T., 2021). Scientists also state the convergence of video games and the field of entertainment, in particular, film production, where video games function as rhetorical texts (Brookey, 2010).

At the core of spatial storytelling in video games is the concept of narrative design, which has been extensively explored in educational contexts. Dickey emphasizes the importance of narrative in supporting problem-solving within complex, multimodal environments, highlighting how adventure game design techniques can be appropriated for interactive learning environments (Dickey, 2006). This approach aligns with the principles of GBL, which leverages gaming technologies to create engaging and motivating learning experiences. Tang et al. argue that GBL fosters situated experiential learning, effectively engaging learners through meaningful activities that traditional didactic methods often fail to achieve (Tang et al., 2009). This intersection of narrative and gameplay creates immersive experiences that can enhance educational outcomes.

The concept of Education 5.0 provides a more humanized teaching with an emphasis on the social and emotional development of students and solutions that improve life in society (Education 5.0, 2023). These prompts educators to develop and use the immersive learning technologies that create an emotional experience for students. For example, in Ternopil, on the basis of the Western Ukrainian National University, the first multifunctional hub with augmented reality technologies was opened in Ukraine, which allows you to implement projects in various fields and master professions, including journalism (Ukrinform, 2023). The hub's opening is a result of Olena Zelenska's initiative for the National Strategy for Creating a Barrier-Free Space by 2030 (National Strategy, 2021).

Spatial storytelling is a visual component of game and immersive storytelling that places events (thematic content) in a certain space (real or imagined), spatially visualizes the events of the story. Scientists view spatial storytelling as a form of storytelling (Bieger, 2016), characterized by non-linear storytelling based on locality (Kocaturk et al., 2023) and referred to as Place-Based Storytelling (Guntarik et al., 2023). It involves identifying repeated patterns in spatial trajectories and narrative compositions (Shin & Woo, 2023, April).

Interdisciplinary immersion of spatial storytelling is emphasized (Hameed & Perkis, 2018). However, the topic of the convergence of educational and journalistic efforts based on immersive spatial stories is very unexplored. It is important to investigate the factors of such convergence, in particular, in comparisons of well-known storytelling models used in pedagogy, journalism, immersive journalism and video games. It is also interesting to trace the genetic roots of these models in archaic stories. By leveraging immersive technologies, educators and journalists can redefine their practices and create deeper connections with audiences in the digital age. The evident digital and informational characteristics of contemporary education, information, and entertainment imply the existence of universal mechanisms and models that foster convergence. The idea has been in the air for a long time, but it is important to prove it on a scientific and theoretical level.

The purpose of the study is to substantiate or disprove the convergence of video games, GBL, and immersive journalism based on a comparison of known storytelling models, starting with mythological tales.

The methodological basis. The study purpose led to the use of the following methods:

- *literature review* – to determine the novelty of the study, to identify current trends, challenges, and gaps to identify current trends, challenges, and gaps;
- *data collection* about visual models of storytelling for their analysis;

- *visualization* - to study spatial storytelling as a visual model;
- *comparative analysis* - to compare known storytelling models offered by archaic narratives, journalism, immersive journalism, video games and learning;
- *cultural analysis* is used to understand how storytelling models converge in different historical and cultural contexts;
- *abstraction* - for studying storytelling models without taking into account their industry characteristics;
- *systemic approach* - to consider storytelling as a systemic phenomenon;
- *generalization* – to plan recommendations for game designers and higher humanities education teachers, and to summarize the results of the study.

Literature Review. It is worth emphasizing the high level of interest of practitioners and theorists of education and journalism in improving storytelling techniques, in particular with the help of gamification, visualization, and virtualization. Significant arrays of scientific information on immersive pedagogy, immersive journalism, educational and journalistic storytelling, interactive storytelling, game-based learning practices, and immersive characteristics of spatial storytelling have been developed.

The number of scientific publications on the Google Scholar platform as of October 5, 2024 (Table 1) shows an interest in audience engagement and storytelling effectiveness.

Table 1

Arrays of scientific publications by research topic

Search keywords	Number of English-language publications	Number of Ukrainian-language publications
“spatial storytelling”, “просторовий сторітелінг”	17 100	11
“immersive pedagogy”, “імерсивна педагогіка”	16 500	31
“immersive journalism”, “імерсивна журналістика”	10 600	14
“immersive video games”, “імерсивні відеоігри”	17 100	31
“game based learning”, “навчання засноване на відео іграх”	26 600	1330
“educational entertainment”, “розважальне навчання”	17 500	5 210
“storytelling of learning”, “сторітелінг навчання”	18 200	845
“journalism storytelling”	16 500	271
“games convergent”, “ігри конвергентні”	500 000	203
“spatial storytelling in education”	292 000	0

The content of Table 1 demonstrates the significant lag of domestic science in the issues of immersiveness and convergence of media and learning compared to global potential. It is noteworthy that the majority of Ukrainian works on game convergence focus specifically on issues of media convergence, emphasizing the convergence of the entertainment and media industries in various aspects: media for children (Mudrak, 2013), library promotion (Skiban, 2019), multi-platform media production (Zhenchenko, 2014), gamification of media space

(Porpulit, 2018).

Instead, spatial storytelling in English-language scientific publications is considered from the point of view of entrepreneurial storytelling (Kimmitt et al., 2024), architecture as spatial storytelling (Lyu, 2019), and museum affairs (Lu, 2017), cultural anthropology (Vasudevan et al., 2022). This emphasizes the universality of the topic of storytelling, including spatial storytelling, in various fields and aspects. Therefore, it provides grounds for searching for established models of storytelling in various spheres of social life and researching their convergence.

Scholars have looked at visual storytelling from different perspectives, focusing on several aspects:

- features and possibilities of the "telling": multimedia (Van Krieken, 2018), immersiveness (Uskali et al., 2021), scrollytelling (Seyser & Zeiller, 2018, July), a personal narratives (internal dialogue) and intentional and existential evidence (Furman, 2023);
- visuality: demonstrability and show (Radü, 2018), Graphic Journalism (Afshana & Din, 2018), Comics journalism (Worden, 2015);
- ethics of visual storytelling (Uskali et al., 2021);
- technical capabilities: narrating networks (Bounegru et al., 2017);
- use in the field of journalism: solutions journalism (Midberry & Dahmen, 2020), communication tool in journalism (Markova & Sukhoviy, 2020).

It's important to note that while there is a lack of scientific and educational works on spatial storytelling in Ukrainian science, the English-speaking world has focused on numerous studies of visual storytelling in education (Lundblad & Jern, 2012), the development of spatial literacy skills (Slayton & Benner, 2020), the use of game-based approaches to teach spatial thinking (Sonneveld et al., 2024, April), the unique aspects of storytelling as a method of spatial planning (Bulkens et al., 2015) and the integration of educational tasks (Jørgensen, 2018). Additionally, there is a focus on the use of immersive visualizations in the humanities through spatial stories (Harris et al., 2011), and more.

Narrative and storytelling as objects of research appear in various fields of knowledge: philology, philosophy, cultural studies, pedagogy and psychology. Today, in the conditions of information wars, the problems of textual construction of world pictures, manipulation of mass consciousness through storytelling and description of events acquire particularly acute importance within the limits of journalistic research. Therefore, a work on the construction of reality (Berger & Luckmann, 2016) is methodological for our research. Our research is based on scientific developments in the fields of ludology and narratology, as they debate and seek balance and connections between storytelling and the rules of the game (Murray, 2005, June), (McManus & Feinstein, 2006).

A special place is occupied by the concepts of "visual narrative", "immersive storytelling" and "spatial storytelling", which are offered for discussion by Finnish researchers (Kukkakorpi & Pantti, 2020).

In our work, we have briefly explored spatial storytelling to support the integration of game-based learning (GBL) principles in the design of higher education courses (Luhova T., 2021). We proposed the author's development of game design canvases for educational needs (Luhova et al., 2019), with emphasis on the education of moral and spiritual qualities of students (Luhova T. , 2022). We also investigated the issue of introducing mythological storytelling structures into the canvas of educational computer games (Gumennykova et al., 2019). All this gives us grounds for formulating the question of the convergence of education, media and archaic structures based on general models of storytelling.

The question of the convergence of modern processes in the conditions of globalization and informatization is controversial. On the one hand, scientists note the "convergence of everything" (Irwin, 2008) and the so-called "convergence of the user" (O'Donnell, 2011). Henry Jenkins defines convergence as "a word that manages to describe technological, industrial, cultural and social change depending on who is talking and what they think they are talking about" (Jenkins, Convergence Culture: Where Old and New Media Collide, 2006). But C. O'Donnell highlights the significant technological organizational and production barriers to the convergence of video games, media, and entertainment (O'Donnell, 2011). In particular, he points out that the "promise of convergence" has not been fulfilled, as it remains problematic and often impossible for different platforms and media industries to use a single resource of personalized artistic assets (O'Donnell, 2011).

C. O'Donnell writes: "Convergence began as an important concept linked to the rapid adoption of digital technologies associated with digital media production and distribution" (O'Donnell, 2011, p. 273). And further: "One of the promises of digital media production was the notion that all things digital carry with them some sort of innate interoperability. The rise of digital media production carried the promise that a single digital data source could provide numerous platforms with custom tailored art assets that could be readily incorporated and deployed. The word convergence, in and of itself, indicates this predilection. However, as the example of videogame production indicates, the reality of convergence is something quite different" (O'Donnell, 2011, p. 276). The complexity of technical convergence, according to C. O'Donnell, holds true for both games and e-learning.

Presentation of the main material with justification of the obtained results. Analysis of immersive storytelling models. In his book "The Hero with a Thousand Faces" Joseph Campbell proposed a model of the hero's journey based on mythological tales. The hero begins his story in an ordinary place, moves in spatial faces difficulties, and eventually returns, having gone through a transformative experience. This journey includes trials, help from allies, and a triumphant reward. The hero's journey can be initiated by his mistakes, and his progress in space occurs from task to task (challenges to challenges). If the hero completes all the tasks, he receives a reward (Campbell, 2008, p. 227). It is the very fact of the hero's journey-movement in space through certain challenges that the character acquires the status of a hero. It is this model that forms the basis for the whole variety of modern storytelling and learning prosses.

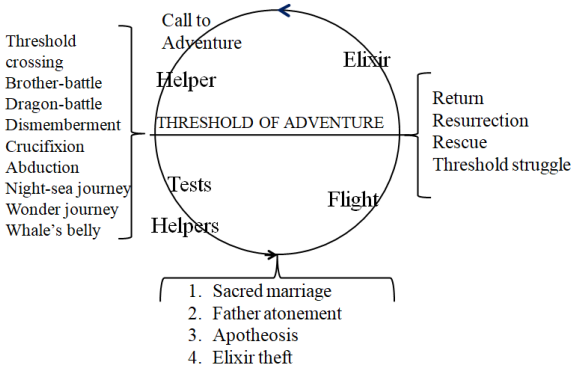


Fig. 1. Model of storytelling "The Hero's Journey" in archaic legends (Campbell, 2008, p. 227)

The Hero's Journey storytelling model shows the hero's development through space. This is consistent with the folklore principle of the empirical and anthropic nature of space. That is, the hero is revealed in space, and space is measured by the actions of the hero, actualized and only around him and at the moment of his action (Lugovaya, 2014). The "Hero's Journey" model harmonizes with the concept of the "magic circle" (Huizinga, 1987).

It is noteworthy that this “Hero's Journey” model has become the basis for educational storytelling to improve teaching effectiveness and learning outcomes: (Brown & Moffett, 1999), (Georgas et al., 2017), (Caserta, 2021), (Busch та ін., 2013), (Simpson & Coombes, 2001), (Costa et al., 2024) et al. An example of such an implementation of J. Campbell's model of archaic tales in education is the attempt of a group of authors from the City University of New York (CUNY), presented in Fig. 2.

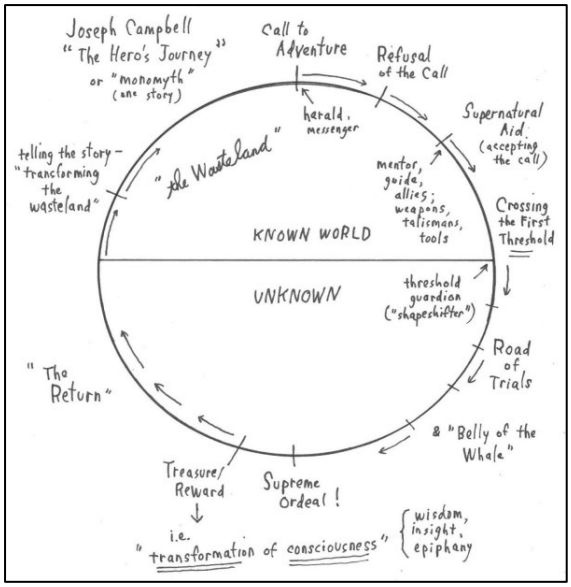


Fig. 2. Hero’s Journey Structure Drawn by Professor Burgess
(Georgas et al., 2017, p. 121)

J. Campbell's model showed considerable stability of adaptations in various fields of knowledge, which can be considered universal. E.g., figure 3 presents the gender educational adaptations of this model.

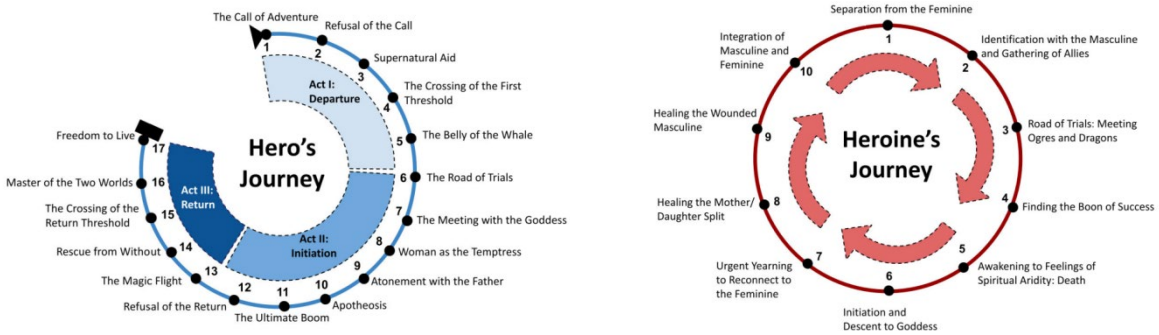
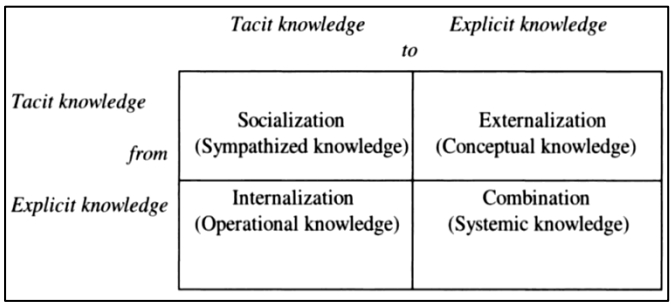


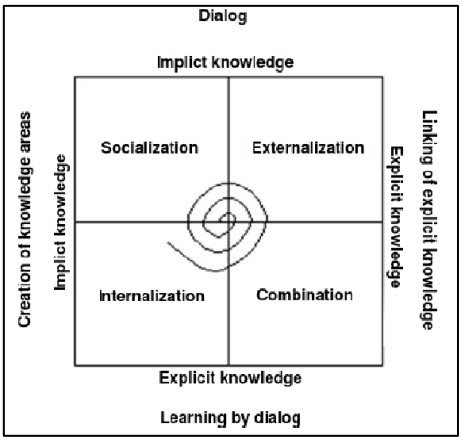
Fig. 3. Depiction of the Campbell (a) and Murdock (b) heroic journeys
(Costa et al., 2024)

Most educational models built on the “Hero’s Journey” focus on student progress. This journey transforms his knowledge (from the known to the unknown and vice versa) in a circular space in a spiral direction. It is because of the hero's return to the starting point of the story in his new capacity that gives him the status of “Hero”. This leads to another association with the knowledge management model (Nonaka & Takeuchi, 2001). This spiral of knowledge model, like J. Campbell's model, is often used to study the educational process (Suazo, 2023). Emphasizing the dynamics of knowledge as the “Hero's Journey”, scientists supplement this

model with a circular spiral as a vector of movement or journey, which transforms ignorance into knowledge and vice versa (Schatten, 2014). E.g., figure 4.



Contents of spiral of knowledge
(Nonaka & Takeuchi, 2001, p. 77)



Contents of spiral of knowledge
(Schatten, 2014, p. 39)

Fig. 4. Models of knowledge management

Gumennykova et al. (2019) have already provided a detailed account of the application of mythological narrative models in the development of computer games and STEAM. Scholars and game developers have attempted to derive a universal canvas or a series of game design canvases based on the availability of universal narrative models (Blazhko & Luhova, 2018). The search for a universal model of storytelling was supposed to help automate the game development process. An example of such an online designer is (Machinations, 2022).

The concept of ludology, which focuses on the mechanics of games as distinct from narrative, has sparked debates about the role of storytelling in video games. While some scholars argue for a separation of gameplay mechanics and narrative, others advocate for a synthesis of both elements to create more engaging educational experiences (Purnomo & Purnama, 2015). This discourse is crucial for understanding how spatial storytelling can be effectively utilized in both gaming and educational contexts. By leveraging narrative techniques and interactive environments, these fields can create powerful educational and media tools that engage learners and audiences alike.

The game space (game environment and the game world) is a fundamental aspect of any game. Game space, rules, and storytelling are inextricably linked, merging into a single phenomenon. Because entering the space is possible only under the condition of accepting certain rules, the space acts according to the rules, and forms the rules, the space is the rules, and therefore is the basis for storytelling within this space. D. Gray clearly shows the connection between narratology and ludology, emphasizing that the space (gaming, business, educational, journalistic, etc.) is determined by rules: “To enter into a game is to enter another kind of space where the rules of ordinary life are temporarily suspended and replaced with the rules of the game. In effect, a game creates an alternative world, a model world. To enter a game space, the players must agree to abide by the rules of that space” (Gray et al., 2010, p. 1).

D. Grey points out the similarity of all types of human activity because of aim-based activity. He writes: “Business, like many other human activities, is built around goals. Goals are a way we move from A to B; from where we are to where we want to be. A goal sets up a tension between a current state A – an initial condition – and a targeted future state B – the goal. In between A and B is something we can call the challenge space; the ground we need to cover in order to get there” (Gray et al., 2010, p. 4). In the figures 5 and 6, game models are presented as entering a special space to achieve goals.

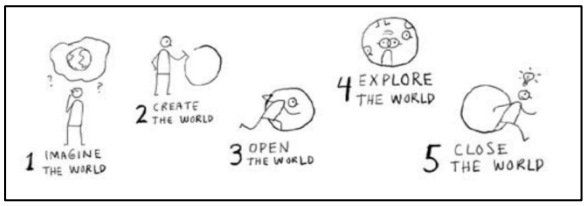


Fig. 5. The Game World
(Gray et al., 2010, p. 3)

Fig. 6. The Game of Business
(Gray et al., 2010, p. 4)

The authors show models in which the game world is revealed and realized through the actions of the heroes (Gray et al., 2010, p. 6). E.g. figures 7 and 8.

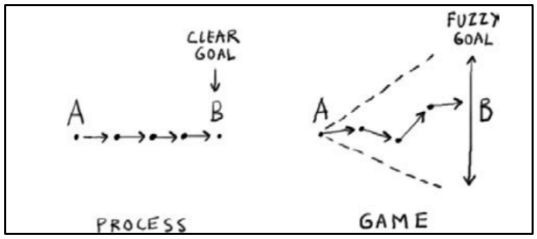


Fig. 7. Space as a process of achieving a goal
(Gray et al., 2010, p. 6)

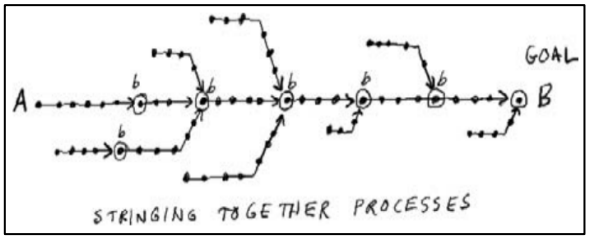


Fig. 8. Space as a plot development strategy
(Gray et al., 2010, p. 6)

In contrast to "Hero's Journey" model (Campbell, 2008) and the knowledge model of I. Nonaka and H. Takeuchi, the models presented by D. Gray and co-authors are linear. They do not assume the hero/player's return to the starting point in a new quality, and therefore do not acknowledge the qualitative transformation of the hero. Even the series of storytelling spaces illustrated by the authors are linear (Fig. 9, 10).

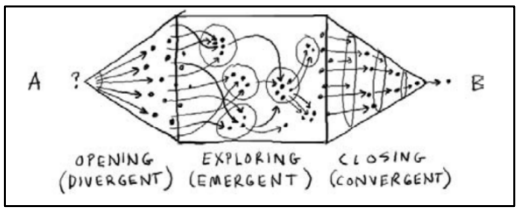


Fig. 9. Linear space as actions of "opening, exploring and closing" the plot
(Gray et al., 2010, p. 12)

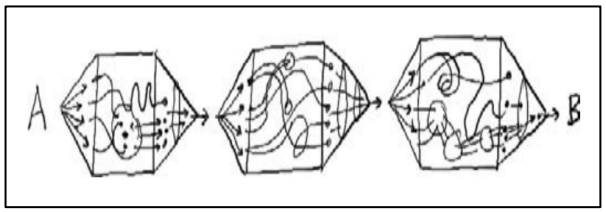


Fig. 10. Algorithm of a storytelling spaces series
(Gray et al., 2010, p. 12)

This linear structure of storytelling space is preserved in the fundamental concept in game design – MDA (Hunicke et al., 2004). According to it, the entire process and algorithm of game and gameplay development is divided into three components through which communication between the designer and the player takes place. At the same time, the designer influences the player with the help of rules, and the player perceives the game through its aesthetics as the leading emotion of the game (Fig. 11).

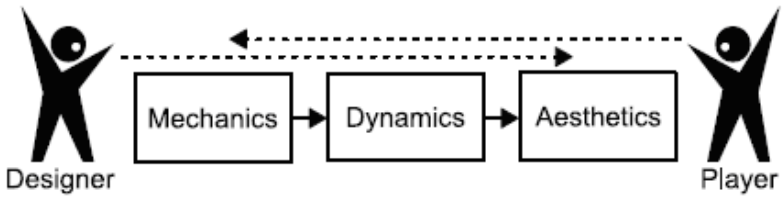


Fig. 11. MDA structure (Hunicke et al., 2004)

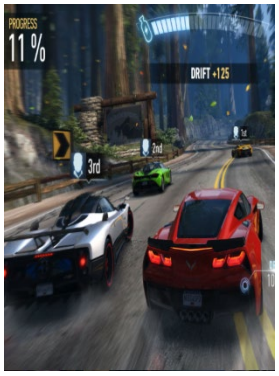
The metaphor of "return" remains in separate mechanisms for maintaining the balance of the game, the so-called "Save Spots". These spots are checkpoints throughout levels that allow players to save their progress (Save Spots, 2024). In this way, the main events of the archaic hero's journey are narrowed down in video games to "Save Spots". It is in them that the player in the person of his character practically dies and is reborn as a demiurge, gaining new knowledge and experience.

Such spatial storytelling is a feedback loop in which the game or learning system enables the player/student to navigate their progress by answering the following questions: Where am I in the game? What is my progress in the game? What is my progress in relation to other players? Often, the player's progress is determined precisely by opening a new game location as a new level of the game. Below are screenshots of game and educational spaces that use spatial storytelling with a linear plot (Fig. 12).

(Candy Crush Saga, 2024)

(Talking Tom Gold Run, 2024)

(Arrow. Download games Snake, 2024)

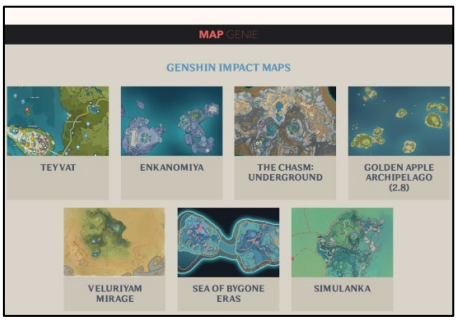


(Need for Speed No Limits, 2024)

Fig. 12. Screenshots of video games with linear storytelling

Games with an open world and a complex, deep story may seem to have a non-linear plot. However, the heroes of such games do not return to the starting point as they should in the demiurge hero journey. Moving around the map locations and doing tasks, gaining experience stretches the complex plot and game events into one line from start to finish. It is worth noting that this concept aligns perfectly with the linear nature of project activity: no pre-project or post-project elements. Ігровий світ, як і проектна діяльність, є простором "boundless opportunities with definite limitations" (Kaszás et al., 2016).

The pictures show screenshots of game maps of open world games (Fig. 13).



(Genshin Impact Maps, 2024)

(NEO Scavenger, 2017)

Fig. 13. Screenshots of game maps of open world games

Most educational courses created based on the credit-module system preserve linear narration as a strategy in the educational process. The Order of the Ministry of Education and Science of Ukraine "On the introduction of the credit-module system for the organization of the educational process" (MON Order № 744, 2005) has legalized this system in Ukraine since 2005. Since 2014, this order has become invalid in connection with the adoption of a new version of the Law "On Higher Education" (Law of Ukraine, 2014) and its harmonization with the European Credit Transfer and Accumulation System (MON Explanation, 2014), legalized in Ukraine since 2009, valid until today (MON Order No. 943, 2009). All these attitudes toward higher education led to the formation of a hierarchical purposeful learning process (Samejima et al., 2003), (Jordan & Jacobs, 1995).

The National Center for the Quality of Education of Ukraine also declares that the goal has been achieved. This is the principle of "fitness for purpose", which is considered as a systemic component of the quality of educational programs. In particular, the term "fitness for purpose" is defined as "the conformity of learning and teaching methods to the stated goals" (NAQA, 2020). The "goal" is understood not from the perspective of the "achievement motive", but as a rigidly formalized system of relational relations and correspondence of all components of education. Under such conditions, the educational space is stretched, as in business processes and project activities, in a line from point A to point B. Modules and credits divide this space. Considering the lack of effect of circular storytelling (Campbell, 2008), the linear model of educational storytelling does not lead to the transformation of the student's knowledge and experience and thus reduces the quality of learning outcomes. We consider this to be the result of the expansion of business values to all areas of social life, including education. This has formed a unique culture of achievement and success, prompting people to constantly optimize and formalize their activities to obtain concrete positive results.

As Casey O'Donnell rightly points out, if the player is limited to overly linear storytelling, it ceases to be a meaningful gaming experience. Gamers often refer to this gameplay as the "railway" in games that everyone travels on. The feedback loops between the systems that make up a game are just as important as the narrative that sits on top of that system (O'Donnell, 2011).

Figure 14 depicts the author's visualization model of the learning experience of the elective academic course "Art Journalism" that was taught in 2022 as part of the "Journalism" program at the National University "Odesa Polytechnic".

Fig. 14. The author's model of entry and navigation of students in the discipline "Art Journalism" for rethinking

Given the above materials, this model will be reinterpreted according to cyclic value-oriented learning (Gawande, 2004), which is the basis of the concept of lifelong learning (Landberg & Partsch, 2023).

Much of the scholarly discussion on immersive media has originated from game studies. Jonne Arjoranta, Rein Koskimaa, and Marko Siitonen analyse pioneering examples of immersive games to create "impact journalism" (Arjoranta et al., 2020).

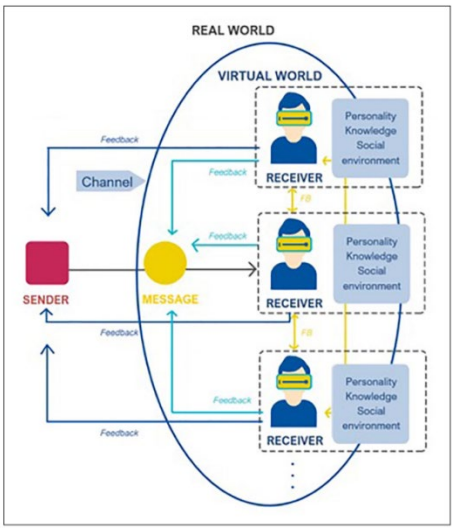
Scholars are exploring the use of virtual reality (VR) for storytelling rather than solely as a setting for action and characters. Space in virtual reality storytelling serves multiple purposes, such as being the focal point of an event, conveying symbolic significance, and intensifying emotions (Jenkins, Game Design as Narrative Architecture. First Person: New Media as Story, 2004), (Kyrylova, 2020). In Ukraine, there are already author projects that explore the principles of storytelling in documentary VR. E.g., (Drutsa, 2019).

The integration of spatial storytelling in immersive journalism has been transformative. Immersive journalism utilizes virtual reality and interactive narratives to create compelling stories that allow audiences to experience events from unique perspectives. This method parallels the immersive qualities found in video games, where players navigate and interact with environments that convey a narrative. Chan et al. discuss how game-based learning can enhance cognitive and affective domains, suggesting that the flow experience – characterized by immersion and concentration—can significantly impact learning outcomes (Chan et al., 2021). This is particularly relevant in immersive journalism, where the emotional engagement of the audience can lead to a deeper understanding of complex issues. The role of technology in facilitating these convergences cannot be overstated. Advances in game design and interactive media have enabled the development of sophisticated educational tools that incorporate elements of spatial storytelling. For example, Hsiao et al. found that digital game-based learning environments can foster creativity and manual skills, demonstrating the potential of games to enhance learning experiences (Hsiao et al., 2014). Similarly, the work of Lai et al. highlights how integrating social elements into game-based learning can further enrich the educational experience by promoting collaboration and interaction among learners (Lai et al.,

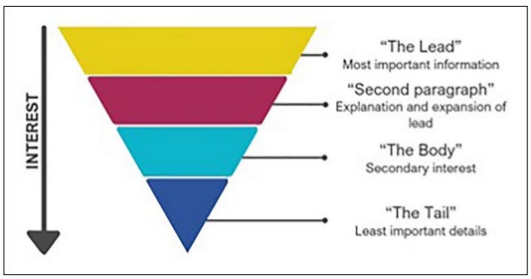
2014).

Nonny de la Peña, the founder of immersive journalism, argues that the effectiveness of immersive documentaries lies in their departure from the replication of sensational stories or catastrophic events. Instead, the narrative focuses on everyday events that are often overlooked by mainstream media due to their lack of sensational appeal. In response to criticisms of the emotional manipulation of audiences, it is argued that such engagements promote personal empathy and a subsequent disposition to help victims or make changes in certain circumstances (Flatlandsmo & Gynnild, 2020). Confidence in immersive journalism grows as awareness increases of the methods and technologies of creating immersive news, attention to the verification of the involved facts and their technological detailing (Zinovieva, 2024). After all, as O. Kyrylova rightly pointed out, immersion journalism is "the presentation of history with the maximum immersion of the audience in the essence of the unfolding event" (Kyrylova, 2020). This is the key to the quality of the news text in the format of immersive journalism, and its fundamental difference from the so-called "yellow press".

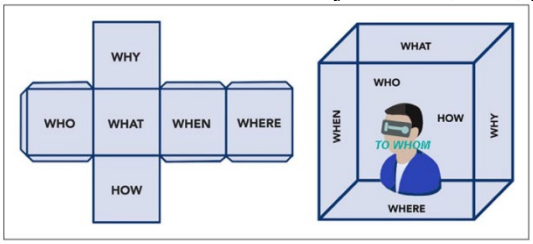
Immersion journalism not only rethinks narrative paradigms but also challenges traditional notions of audience engagement, destroying the established journalistic concept of the "inverted pyramid" as a narrative paradigm (Armentia & Caminos, 2008), (Warren, 1979), (Paíno Ambrosio & Rodríguez Fidalgo, Proposal for a new communicative model in immersive journalism, 2019), (Kyrylova, 2020). On this basis, the authors propose a new communicative model for immersive journalism (Fig. 15).



Multiuser immersive communication model
(Paíno Ambrosio & Rodríguez Fidalgo, Proposal for a new communicative model in immersive journalism, 2019, p. 10)



Inverted pyramid
(Paíno Ambrosio & Rodríguez Fidalgo, Proposal for a new communicative model in immersive journalism, 2019, p. 10)



Structure of RV journalistic content: first level of deepening
(Paíno Ambrosio & Rodríguez Fidalgo, Proposal for a new communicative model in immersive journalism, 2019, p. 13)

Fig. 15. Models of immersive journalism
(Paíno Ambrosio & Rodríguez Fidalgo, Proposal for a new communicative model in immersive journalism, 2019, p. 10)

Interestingly, the immersive communication model presented by the authors (Paíno Ambrosio & Rodríguez Fidalgo, Proposal for a new communicative model in immersive journalism, 2019) returns to the image of the "magic circle" (Huizinga, 1987) and the metaphor of "the return of the hero in a new quality" (Campbell, 2008).

Immersive virtual environments return the linear pragmatic storytelling used in game design and educational spaces to an archaic circular-spiral model with an element of "return"

and qualitative transformation of the hero. A clear example is the model of the "immersive journey of journalistic stories" (Fig. 16) (Hernández-Rodríguez, 2023).

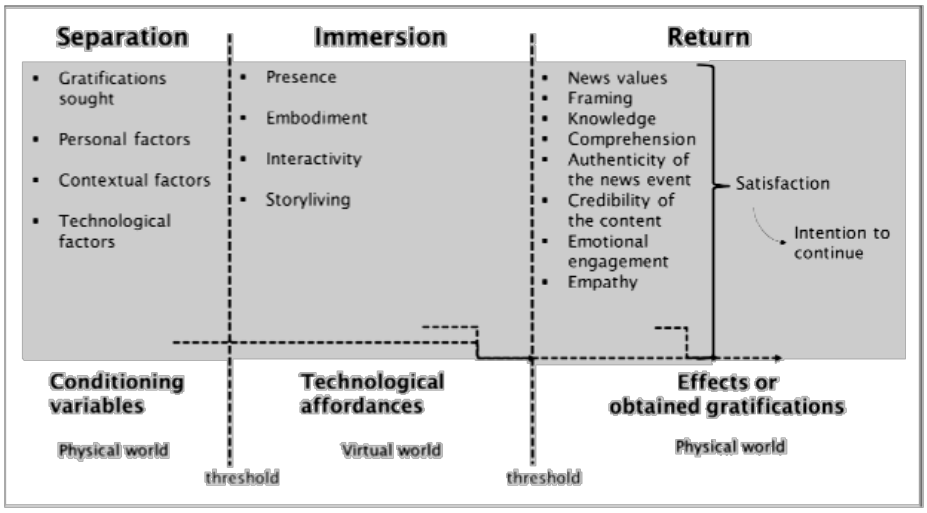


Fig. 16. A user's immersive journey in a virtual reality journalism story (Hernández-Rodríguez, 2023)

Virtual reality also makes a shift in storytelling accents. If, in traditional journalistic reports, the focus is on the heroes of the event, then in immersive journalism, the focus is on the user himself, who becomes the hero of the event. Here, the story will be told in the first person. Therefore, the principle of impartiality of a journalist must be transformed (Ojala, 2021). Today, scholars emphasize the mutual subjectivity of the user in the VR space and the journalist who creates the VR content, chooses the camera position, and provides a guided experience (Mabrook, 2021). Credibility in the narrative will be based on visual storytelling, based on examining the data involved in designing virtual environments and immersive stories. Interactive fact-checking and data journalism will play a big role here (Tong & Zuo, 2021).

The core of immersive stories in journalism, education, and games, remains the hero/learner/player/user. Therefore, it is worth mentioning here the development of concepts of student-oriented learning (Caputi & Garrido, 2015), (Luhova T. , 2021), whose roots go back to GBL (Gee, 2003), human-oriented design (Norman, 2023). The concept of "unique communicative dynamics" created by viewers and readers themselves becomes the focus of attention. Such storytelling and narrative is called user-oriented. It is noteworthy that such changes are characteristic of most traditional narrative processes and institutions moving to the digital environment. For example, electronic libraries also reorient communicative and fund-forming processes to the user. Web 3.0 technologies transform the principles of cataloguing library resources, aligning them with reader interests (Luhova & Balaban, 2020). Enhanced interactivity and user engagement are the focus of digital narratives.

Another feature of VR storytelling is its non-verbal nature. The person in the virtual world explores the world through movement in spatial and research of objects in the virtual environment. In such a situation, storytelling becomes internal: external speech becomes internal, which constructs paradigms of thinking (Furman, 2023). While the journalist supposedly dissolves in the storytelling environment.

Immersive journalism allows the audience to experience events as if they were there in person through virtual simulations. These simulations accurately reproduce objects, people, sounds, and sensations, providing a more interactive and engaging experience compared to traditional storytelling. As technology in the news industry advances, storytelling genres now include 360-degree photos and videos, augmented reality, mixed reality, and news video games,

shaping a more captivating landscape for journalism.

Spatial is a key factor in determining when it is appropriate to integrate virtual reality into a journalistic product (Migielicz & Zacharia, 2016). This applies to situations where physical visits to a location are challenging, when a thorough comprehension of the story requires immersion in the environment beyond traditional written or visual media, and when the action requires looking in different directions.

In the immersive space, all models of storytelling converge, creating a kind of "cross reality" (Extended Reality - XR), as a new form of content creation, in which all technologies can be mixed, with the help of which "digital objects are transferred to the physical world and physical objects are transferred into the digital world" (Gynnild et al., 2020)**.** Hence, the visual virtual storytelling spatial serves as the meeting point for industries that inform, educate, influence, and entertain.

According to scientists (Paíno Ambrosio & Rodríguez Fidalgo, 2019), (Kyrylova, 2020) the main feature of the transmission of a message from the communicator to the recipient is the virtuality and technology of the environment in which the recipient receives the message (Paíno Ambrosio & Rodríguez Fidalgo, 2019).

Scientists indicate the effect of immersion as specific to immersive content, in contrast to the effect of presence, which is a subjective feeling, typical for the perception of products of journalism, literature, and cinematography (Gynnild et al., 2020)**,** (Paíno Ambrosio & Rodríguez Fidalgo, Proposal for a new communicative model in immersive journalism, 2019). Immersion, according to (Bowman & McMahan, 2007), is an objective feature of technology. We assume that the immersion effect is created by the virtual environment, in virtual spatial storytelling. Spatial awareness itself is a step of immersion in immersive storytelling: users have to make sure that the mediated situation is spatial; and that they are in the specified space (Vettehen & al., 2019); (Hofer & al., 2012). The user examines the environment, becomes aware of the chronotope of the narrative, begins to interact with the environment, intuitively following the programmed plot, and chooses a role, for example, a witness, resident, expert, or hero of the story (Ryan, 2015). Thus, the user can explore journalistic materials from different roles and perspectives, gaining new experience. This is how the concept of a convergent user, who can not only consume and generate content on different platforms but also change roles for this, is established.

Also, important is the concept of the "multidimensional nature of immersion", where each level of journalistic narrative generates a different degree of user involvement, forming a new communicative landscape (Arjoranta et al., 2020). The illusion makes the lack of a virtual reality experience seem more real than other forms of journalistic storytelling. L. Evans (Evans, 2019, p. 11) states that VR is "an environment that offers something – immersion, interaction, even co-presence – that other media cannot because of the degree of loss and interaction that VR can achieve" (Gynnild et al., 2020)**.**

Discussion. All the above makes it possible to state that education, journalism, games as part of the entertainment industry, all communication processes and archaic mythology have a common goal to influence their respondents (students, mass viewers and readers, gamers, social communicators from the archaic to today) with the aim of forming certain conclusions (narratives) and a picture of the world. The tools for such influence are storytelling and engagement. Under the influence of information integrative technologies, these independent fields of human activity are converging. Visualization is presented in the figure 17.

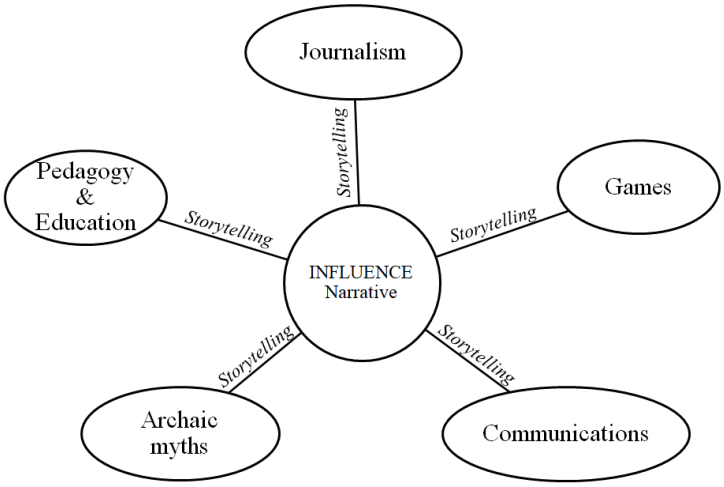


Fig. 17. Narrative influence as a convergence's core

The view of convergence only in the dimensions of digitalization (O'Donnell, 2011) leads to issues of interoperability of databases, integration of different digital platforms, content flow from one electronic system to another, and adaptation of content from one media system to another. It also contributes to the development of cloud environments as convergent spaces. Economic convergence opens up issues of production coherence (O'Donnell, 2011), merger of media industries and educational platforms, legal aspects of copyright and related rights. Organizational convergence raises the issue of coordination of efforts of representatives of various professions (teachers, methodologists, journalists, editors, governments, artists, engineers, programmers, designers, etc.) to implement various cross-cutting tasks in educational and media systems. Convergence, as aptly pointed out by (Jenkins, 2006, p. 322), is an ongoing process or series of intersections between different media systems rather than a fixed relationship. This understanding of convergence is close to models of the hero's journey (Campbell, 2008).

A conceptual view of convergence is the ability of different spheres of human activity to converge in the process of their evolution based on universal human nature under the influence of various factors. For example, under the influence of three components of informatization: computerization, mediatization, and intellectualization (Webster, 2014). This makes it possible to look for universal models of storytelling as a basis for improving social processes. After all, they influence the choice of specific strategies and methods (Fig. 18).

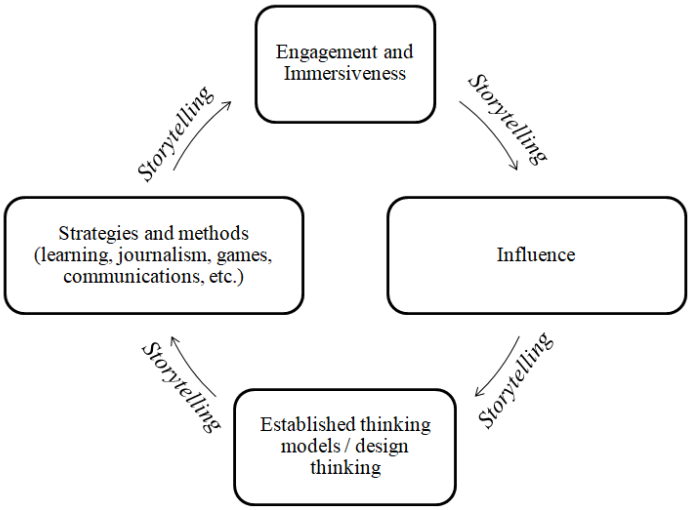


Fig. 18. The social cycle of storytelling

Immersive virtual technology, when applied in educational or journalistic contexts, helps recipients reconnect with archaic structures, creating opportunities for transformation, revival, improvement, and the development of new qualities. This process revitalises the mythology of "return". Its implications for research in various fields, including migration processes, cultural anthropology, the philosophy of civilization, knowledge management, and quality standards, are promising.

We have developed a model of immersive spatial storytelling based on the "Hero's Journey". This concept can underlies the convergence of learning, journalism, archaic mythology, and other communicative processes (Fig. 19).

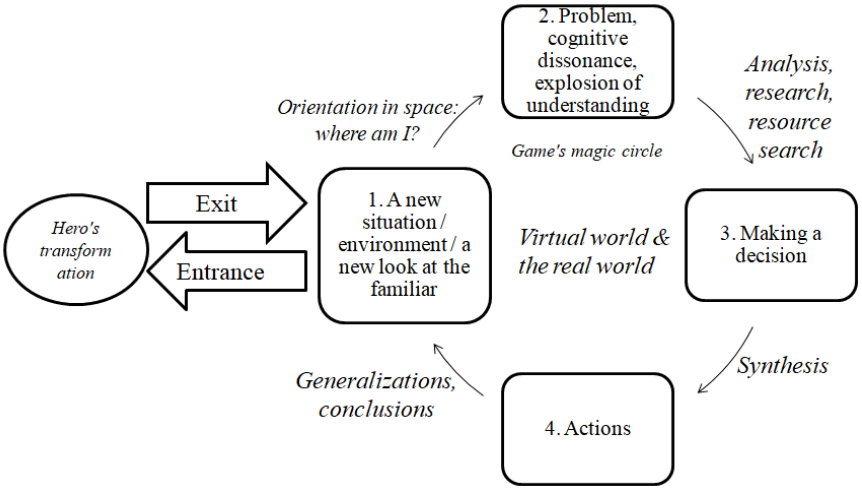


Fig. 19. A model of immersive spatial storytelling based on the "Hero's Journey"

Conclusion. Technological and organizational convergence is well-established in media, but our research reveals the existence of a conceptual convergence that integrates diverse areas of social life, such as journalism, education, programming, entertainment, and business. This conceptual convergence is rooted in universal storytelling paradigms, which may not only be seen as technological integration but also as an expression of the immanent nature of human psychology and social information. Storytelling, deeply embedded in the collective unconscious, reflects basic cognitive frames that resonate across different mediums and domains.

However, convergence goes beyond these psychological patterns. It represents the merging of artificial environments with natural thinking patterns, where immersive virtual spaces often return us to archaic narrative structures centred on the hero's transformation. This dynamic is essential for the convergence of multiple areas of life where information plays a central role.

Therefore, convergence is not just about the flow of content across platforms. It is a complex, human-driven process combining artificial and natural information, thinking, and storytelling systems. The immersive nature of virtual spaces and games emphasizes this by bringing us back to fundamental psychological experiences, making it a key element in how convergence operates across industries.

Prospects for further research. The issues of characteristics of immersive space as a factor of immersion, and related aspects of the hero's movement in space, game dynamics, influence management, the concept of flow in convergence and immersive storytelling are promising. All this will be considered in our further studies.

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ПРОСТОРОВИЙ СТОРІТЕЛІНГ ЯК КОНВЕРГЕНЦІЯ Е-НАВЧАННЯ, ВІДЕОІГОР, АРХАЇКИ ТА ІМЕРСИВНОЇ ЖУРНАЛІСТИКИ

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Анотація. У цьому дослідженні досліджується конвергенція відеоігор, ігрового навчання (GBL) та імерсивної журналістики за допомогою різних моделей оповідання, зокрема «Подорож героя» Джозефа Кемпбелла. Конвергенція розглядається з кількох поглядів: технічної, економічної, правової, організаційної та концептуальної. Дослідження підкреслює подвійну природу конвергенції: природну, яка притаманна природі людини та соціальної інформації, та штучну, яка зумовлена інформатизацією. Дослідження визначає концептуальну конвергенцію, яка ґрунтується на універсальних наративних парадигмах і людській психології, значною мірою спричиненою технологічним прогресом. Ця конвергенція поєднує штучні та природні системи інформації та оповідання. Освіта, журналістика та ігри, усі комунікаційні процеси та архаїчна міфологія мають спільну мету: впливати на аудиторію, щоб формувати сприйняття та висновки про світ. Інструментами такого впливу є оповідання і залучення. З розвитком технологій інформаційної інтеграції ці раніше незалежні сфери починають зближуватися. Помічено, що навчальні курси, як правило, дотримуються лінійного оповідання, що може обмежити трансформацію знань і відобразити вплив бізнес-цінностей в освіті. Навпаки, журналістика із зануренням використовує просторове оповідання, щоб висвітлити події, які не помічаються, кидаючи виклик традиційним форматам оповідання. Імерсивні технології мають потенціал трансформувати освіту шляхом переміщення акценту з лінійного кредитно-модульного підходу до ціннісно-орієнтованої освіти, зосередженої на концепції «повернення героя». Дослідження пропонує моделі соціального циклу оповідання і представляє конвергентну модель просторового оповідання занурення, засноване на подорожі героя. Було помічено, що конвергенція ігрового навчання та занурювальної журналістики спрямована на нову якість, засновану на трансформаційній теорії.

Ключові слова: просторове оповідання; конвергенція; ігрове навчання; архаїка; імерсивна журналістика; відеоігри; ІКТ в освіті