Postmodern Openings
ISSN: 2068-0236 | e-ISSN: 2069-9387
Covered in: Web of Science (WOS); EBSCO; ERIH+; Google Scholar; Index Copernicus; Ideas RePeC; Econpapers; Socionet; CEEOL; Ulrich ProQuest; Cabell, Journalseek; Scipio; Philpapers; SHERPA/RoMEO repositories; KVK; WorldCat; CrossRef; CrossCheck

2020, Volume 11, Issue 2, pages: 267-276 | https://doi.org/10.18662/po/11.2/174

Game-thinking in Personnel Recruitment and Selection: Advantages and Disadvantages

Dan Florin STĂNESCU[1], **Cătălin IONIȚĂ**[2], **Ana-Maria IONIȚĂ**[3]

[1] National University of Political Studies and Public Administration, Bucharest, dan.stanescu@comunicare.ro

[2] Structural Management Solutions, catalin.ionita@structuralmanagement.ro

[3] Structural Management Solutions, anamariaionita@structuralmanagement.ro

Abstract: Game-thinking, more specific gamification, serious games and play, has beginning to get more attention and to be appear in a variety of non-game contexts, including organizational settings. In a recent survey of HR practitioners, 75% of the participants indicated that they would consider using gamification as part of their future screening and selection strategy (Povah, Riley, & Routledge, 2017). In this respect, current paper aim to investigate and to present the advantages and disadvantages of using gamification in two of the most important areas of organizational life, namely personnel recruitment and selection.

Defined as the organizational activities that influence the number and types of applicants who apply for a position and affect whether a job offer is accepted (Breaugh, 1992), recruitment can benefit from gamification through the process of finding the best fit between potential applicants and the recruiting organization and to enhance the recruitment process itself (Gangadharbatla & Davis, 2016). In the selection area, usually, organizations provide to applicants a series of psychological assessments in order to later predict job performance and to support shortlisting and eventually, hiring decisions. In this area, game-based assessment represents a well-established methodology used to increase the fairness perception of the selection process, reduce anxiety, and to better assess knowledge, skills, abilities and other characteristics of job candidates.

The future of game-thinking, especially of GBA is further discussed, with a clear accent on both its limitations and true potential.

Keywords: *Game based assessment; recruitment; selection; advantages.*

How to cite: Stanciu, R., & David, A.E. (2020). Game-thinking in Personnel Recruitment and Selection: Advantages and Disadvantages. *Postmodern Openings, 11*(2), 267-276. https://doi.org/10.18662/po/11.2/174

1. Introduction

The way organisations structure their Human Resources function and corresponding technology has constantly evolved. Over the years, majority of organisations moved away from traditional approaches to a modern best-of-breed technology, developed for specific purposes, and recently to a postmodern more complex Enterprise Resource Planning (ERP) software.

In this respect, postmodernism tries to undermine taken-for-granted assumptions (Hardy & Palmer, 1999). In this regard, the use of game-thinking and gamification in organizational life can be considered as representing a postmodern perspective on HR function.

Game-thinking and especially gamification, defined as "an informal umbrella term for the use of video game elements in non-gaming systems to improve user experience and user engagement" (Deterding, Sicart et al., 2011, p. 1) was successfully used in marketing (Sarner, 2013), sales (Chapman, 2014) and lately in human resource management (DuVernet & Popp, 2014; Munson, 2013).

Gamification is used in many fields of human resources (Krasulak, 2015), starting from learning and development activities, in order to make learning processes more fun and attractive for employees, to recruitment and assessment processes, which is usually called Game-Based Assessment (Wear, 2018).

Therefore, gamification is rather the association of various elements from gaming industry (e.g. badges, rewards, challenges, missions etc.) in order to motivate participation, engagement, and even, loyalty (Deterding, Dixon et al., 2011). According to Huotari & Hamari (2012) conceptualization, gamification refer to the same psychological experiences as play and games usually do. The essential idea behind gamification is to use the innate human interest and passion for playing games and solving puzzles (Groh, 2012) in order to increase the motivation and engagement of participants in non-game environments (Burke, 2014; Hamari et al., 2014; Pavlus, 2010; Wood & Reiners, 2015).

Although gamification has the potential to be integrated in various areas of organizational life (Callan et al., 2015), as stated by Narayana et al. (2016, p. 32) "gamification has a particularly place in the HR community" (Narayana et al., 2016, p. 32). In a 2017 survey of HR practitioners, "75% indicated that they would consider using gamification as part of their screening and selection strategy" (Cut-e Group, 2017, p. 3).

People analytics, which usually needs high-quantity and high-quality of data, bear on a lot of HR issues such as recruiting, performance appraisal,

leadership etc. (Joy, 2017). In GBA, that information can "consist of four types of observations: Time to respond, Accuracy of answers, Points earned, and number of Attempts" (Heinzen, 2014, p. 1). As a result of this, companies have started to use game-based assessment in order to evaluate different variables of the workplace such as job skills and individual characteristics (Wear, 2018).

2. Advantages of GBA

Games represent one of the most powerful instruments for studying human behavior. Narayana et al. (2016) stated that using advanced analytics and data-driven decision-making, HR professional are now able to achieve recruiting efficiency, unbiased talent assessment, and increased employee retention (Narayana et al., 2016).

When HR practitioners decided to introduce gamification into their recruitment processes, it brings several benefits. As stated by Montefiori since 2016, employers using GBAs considered them more innovative and equally as professional as self-report questionnaires. Moreover, GBAs present an innovative brand image and enhance attractiveness to prospective candidates (Montefiori, 2016), especially among youth (Joy, 2017).

Also, GBAs have been shown to increase motivation and to reduce the test anxiety and have been received well by candidates in real selection settings (Montefiori, 2016). It is well known that increased commitment and involvement in the process leads to increased quantity and quality of data (Narayana et al., 2016).

Although the evidence-based proofs are scant in many of cases, there are a series of arguments in favor of games-based assessment. GBAs can provide more authentic contexts for assessments due to the fact that candidates are immersed in the game, and therefore are more likely to show genuine responses (Povah et al., 2018).

It has been well established that anxiety has a negative impact on user performance on different types of tests (Cassady, 2004; Egloff & Schmukle, 2002). Since 1999, Elliot and McGregor observed that for many people taking a standardized test is in many cases a tense experience, and test anxiety can impact the performance on the respective tests (Elliot & McGregor, 1999).

In this respect, Shute and Rahimi (2017, p. 4) observed that "students using the computerized tests demonstrated significantly more favorable attitudes towards computer-based instruction compared with those who used paper-and-pencil tests" (Shute & Rahimi, 2017, p. 4).

Furthermore, Shute (2011), studying students population, observed that using a serious game on summative evaluation can challenge students to perform at their best because they may "forget" that they are in a testing situation and test anxiety may be diminished – the so called *stealth assessment* as labeled by Shute (Shute et al., 2016). This stealth approach is designed to reduce the "player's" test anxiety and bias to respond in a socially desirable way (Shute et al., 2009).

Usually, when a test outcome is high-stakes, some test-takers engage in intentional distortion, in which they tend to deliberately inflate their scores (Landers et al., 2011). Using GBA in addition (or instead) to traditional tests may reduce the amplitude of these effect because desirable answers or behaviors are less obvious for participants (Gangadharbatla & Davis, 2016).

Serious games in their digital environments (software based) can be programmed to capture, store, and share massive amounts of user data over time through advanced systems that goes beyond traditional assessment measures (De Klerk et al., 2015).

In addition, sensor technologies that track physiological parameters can also capture massive amounts of user data to provide indicators of specific behaviors (Parsons & Reinebold, 2012). This data can be synthesized, analyzed, and fed back to users immediately as an ongoing assessment and/or collected over time to provide insights into user performance profiles for detailed feedback or summative purposes (Rahkila & Karjalainen, 1999).

3. Disadvantages of GBA

As Woźniak (2015) pointed out, „one need to remember that playing a game is not equivalent to taking a part in an Assessment Center" – even if in the game tasks reflect those that are critical for the job (Woźniak, 2015, p. 29). How players carry out their roles in playing the game is merely an approximation of how they might perform in their real professional roles.

The GBA market is dominated by a large variety of alternatives to traditional psychological tests (personality, aptitudes etc). "Many of these are based on scenarios or contexts which might appear irrelevant at best and at worst miscommunicate the role requirements to potential job applicants" (Povah et al., 2018, p. 4).

If we are considering the strong improvements in statistical methodology, using serious games as a tool for assessment may add value to the domain of assessment (De Klerk & Kato, 2017). In educational field studies it had been observed that serious games have the potential to reveal

Knowledge, Skills, and Attributes (KSAs) of students that are hard to detect when assessed with more traditional assessment methods (Iseli et al., 2010; Levy, 2013).

Another important benefit of the increased technological and statistical possibilities is that large quantities of data can be processed, logged, and analyzed. This is furthermore supported by the latest development in the scientific community such as the Big Data in Psychological Assessment (BDPA) project. The project aim is to connect the worlds of psychology and computer science in the occupational education field. In order to achieve that, universities and business organizations combined knowledge and expertise on the use and interpretation of Big Data, developing scientific educational modules that will enable students and professionals to enhance the quality and relevance of their knowledge and skills (bdpa.eu).

Although such initiatives are welcomed, the massive quantity of information that may be collected during GBA represent an important challenge. De Klerk and Kato (2017) noted that "in contrast to a standardized test, which only produces product data, a serious game also provides process data" (De Klerk & Kato, 2017, p. 34). Product data represent the values that individuals produce by performing in a test or game that give an indication of their performance. In a standardized test this is usually the score of the correct answers. Process data contain mouse clicks, reaction time, navigation paths etc. (De Klerk & Kato, 2017, p. 34; Rupp et al., 2012). As mentioned by De Klerk and Kato (2017) "the challenge is to find meaningful relationships between the data presented in the log files and their relationships to the constructs to be measured in real life" (De Klerk & Kato, 2017, p. 35).

A recent review performed by Lumsden et al. (2016) pointed the need for increased rigor in evaluating game-based assessment approaches using evidence-based design studies that increase causal inferences that can be made about the validity of those games as assessment tools and increased sample sizes to increase their statistical power. Luckily, there are several studies that aimed at examining the associations between user performance in game-based assessments and traditional validated assessments (Levy et al., 2016; Wiloth et al., 2016).

Moreover, a series of factors, such as the selection of objects in the environment, the interface, or colors that increase engagement or create a sense of authenticity, may at the same time introduce biases and "noise" into assessments that can impact the assessment (De Klerk et al., 2015; Kraemer, 1992; Rupp et al., 2010).

Another challenge in using games for assessment is related with the risk

that the game mechanics used to engage users may undermine their validity (Kato & de Klerk, 2017). Although there is an opinion that serious games can be less engaging compared to commercial games (Buday et al., 2012), there is also a risk that they can become too engaging.

Regarding fairness, "people are more likely to react positively to the idea of gamification when they have previous gaming experience and positive attitudes toward serious games. Conversely, those with little or no experience with games may view the use of serious games in a high-stakes context as inherently unfair. Even those with game experience may view the use of serious games and gamification in a high-stakes context like selection as unfair if the serious game or gamification is poorly designed or executed" (Armstrong et al., 2016, p. 146).

4. Conclusions

In applying game-thinking to HRM, especially in recruitment and selection areas, several limitations must be further considered. When digital serious games are adopted, different demographics must be considered. For instance, Koivisto and Hamari (2014, p. 22) observed that ease of use was negatively influenced by age and gender, women reported perceiving more social benefits from gamification.

In conclusion, we would like to draw attention to the fact that even if a game is fun to play and engaging, if it isn't predicting job performance, the so-called predictive validity, then it is no point using it in the recruitment and selection processes.

References

Armstrong, M. B., Landers, R. N., & Collmus, A. B. (2016). Gamifying recruitment, selection, training, and performance management: game-thinking in human resource management. In H. Gangadharbatla & D. Z. Davis (Eds.), *Emerging research and trends in gamification* (pp. 140-165). IGI Global.

Buday, R., Baranowski, T., & Thompson, D. (2012). Fun and games and boredom. *Games For Health. Research, Development, and Clinical Applications, 1*(4), 257–261. https://doi.org/10.1089/g4h.2012.0026

Burke, B. (2014). GAMIFY: How gamification motivates people to do extraordinary things. Gartner, Inc.

Callan, R. C., Bauer, K. N., & Landers, R. N. (2015). How to avoid the dark side of gamification: Ten business scenarios and their unintended consequences. In T. Reiners & L. C. Wood (Eds.), *Gamification in education and business* (pp. 553–568). Springer International Publishing.

Cassady, J. C. (2004). The impact of cognitive test anxiety on text comprehension and recall in the absence of external evaluative pressure. *Applied Cognitive Psychology, 18*(3), 311–325. https://doi.org/10.1002/acp.968

Chapman, L. (2014). Ambition Solutions raises $2M for new ways to gamify sales. *The Wall Street Journal.* http://blogs.wsj.com/venturecapital/2014/06/04/ ambition-systems-raises-2m-for-new-ways-to-gamify-sales/

Cut-e Group. (2017). White Paper: Ahead of the game. Best practice in games, gamification and game-based assessment. https://www.cut-e.com/online-assessment/gamification-in-recruitment/httpwwwcut-ecomgamification-white-paper/

De Klerk S., & Kato P. M. (2017). The future value of serious games for assessment: Where do we go now? *Journal of Applied Testing Technology, 18*(S1), 32-37.

De Klerk, S., Veldkamp, B. P., & Eggen, T. J. (2015). Psychometric analysis of the performance data of simulation-based assessment: A systematic review and a Bayesian network example. *Computers and Education*, *85*, 23–34. https://doi.org/10.1016/j.compedu.2014.12.020

Deterding, S., Dixon, D., Khaled, 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, September 28–30, 2011* (pp.9– 15). Tampere, Finland: ACM. https://doi.org/10.1145/2181037.2181040

Deterding, S., Sicart, M., Nacke, L., O'Hara, K., & Dixon, D. (2011). Gamification: Using game design elements in non-gaming contexts. In *Proceedings of the International Conference on Human Factors in Computing Systems, CHI 2011, Extended Abstracts Volume, May 7-12, 2011* (pp. 2425-2428). Vancouver, Canada: ACM. https://doi.org/10.1145/1979742.1979575

DuVernet, A. M., & Popp, E. (2014). Gamification of workplace practices. *The Industrial-Organizational Psychologist, 52*(1), 39–44.

Egloff, B., & Schmukle, S. C. (2002). Predictive validity of an implicit association test for assessing anxiety. *Journal of Personality and Social Psychology*, *83*(6), 1441-1455. https://doi.org/10.1037/0022-3514.83.6.1441

Elliot, A. J., & McGregor, H. (1999). Test anxiety and the hierarchical model of approach and avoidance achievement motivation. *Journal of Personality and Social Psychology*, *76*(4), 628-644. https://doi.org/10.1037/0022-3514.76.4.628

Gangadharbatla, H., & Davis, D. Z. (2016). *Emerging research and trends in gamification*. Information Science Reference.

Groh, F. (2012). Gamification: State of the art definition and utilization. *Proceedings of the 4th Seminar on Research Trends in Media Informatics,* February 13, 2012 (pp. 39-46). Ulm, Germany: Ulm University.

https://www.researchgate.net/publication/230854756_Gamification_State_of_the_Art_Definition_and_Utilization_39

Hamari, J., Koivisto, J., & Sarsa, H. (2014). Does gamification work? – A Literature review of empirical studies on gamification. *Proceedings of the 47th Hawaii International Conference on System Sciences, Hawaii, USA, January 6–9, 2014*. https://doi.org/10.1109/hicss.2014.377

Hardy, C., & Palmer, I. (1999). Pedagogical practice and postmodernist ideas. *Journal of Management Education*, *23*(4), 377-395. https://doi.org/10.1177/105256299902300405

Heinzen T. E. (2014). Game-based assessment: Two practical justifications. Proceedings of the KDD Annual Computer Science Conference.

Huotari, K., & Hamari, J. (2012). Defining gamification: A service marketing perspective. *Proceedings of the 16th International Academic MindTrek Conference, October 3–5, 2012* (pp. 17–22). Tampere, Finland: ACM. https://doi.org/10.1145/2393132.2393137

Iseli, M. R., Koenig, A. D., Lee, J. J., & Wainess, R. (2010). Automated assessment of complex task performance in games and simulations (CRESST Research rep. no. 775). National Center for Research on Evaluation, Standards, Student Testing. http://www.cse.ucla.edu/products/ reports/R775.pdf

Joy, M. M. (2017). An investigation into gamification as a tool for enhancing recruitment process. *Ideal Research, 3*(1), 56-65.

Kato P. M., & de Klerk, S. (2017). Serious games for assessment: Welcome to the jungle. *Journal of Applied Testing Technology, 18*(S1), 1-6.

Koivisto, J., & Hamari, J. (2014). Demographical differences in perceived benefits from gamification. *Computers in Human Behavior , 35*, 179–188. https://doi.org/10.1016/j.chb.2014.03.007

Kraemer, H. C. (1992). *Evaluating medical tests: Objective and quantitative guidelines*. Sage Publications.

Krasulak, M. (2015). Use of gamification in the process of selection of candidates for the position in the opinion of young adults in Poland. *Jagiellonian Journal of Management, 1*(3), 203 -215.

Landers, R. N., Sackett, P. R., & Tuzinski, K. A. (2011). Retesting after initial failure, coaching rumors, and warnings against faking in online personality measures for selection. *The Journal of Applied Psychology, 96*(1), 202–210. https://doi.org/10.1037/a0022609

Levy, L. M., Solomon, R., Johnson, J., Wilson, J., Lambeth, A. J., Gandy, M., & Liu, R. (2016). Grouches, extraverts, and jellyfish: Assessment validity and game mechanics in a gamified assessment. *Proceedings of 1st International Joint Conference of DiGRA and FDG*. Dundee, Scotland, UK. http://www.digra.org/digital-library/forums/13-digra-fdg2106/

Levy, R. (2013). Psychometric and evidentiary advances, opportunities, and challenges for simulation-based assessment. *Educational Assessment, 18*(3), 182– 207. https://doi.org/10.1080/10627197.2013.814517

Lumsden, J., Edwards, E. A., Lawrence, N. S., Coyle, D., & Munafò, M. R. (2016). Gamification of cognitive assessment and cognitive training: A systematic review of applications and efficacy. *JMIR Serious Games*, *4*(2), e11. https://doi.org/10.2196/games.5888

Montefiori, L. (2016). Game-based assessment: Face validity, fairness perception, and impact on employer's brand image. *Assessment and Development Matters*, *8*(2), 19-22.

Munson, L. (2013). New year, new workplace! SIOP announces the top 10 workplace trends for 2014. https://www.siop.org/article_view.aspx?article=1203

Narayana, D., Gertner-Samet, A., Cohen, M. M., & Polli, F. (2016, September). Gamification of the hiring process. *Workforce Solutions Review*. IHRIM.

Parsons, T. D., & Reinebold, J. L. (2012). Adaptive virtual environments for neuropsychological assessment in serious games. *IEEE Transactions on Consumer Electronics, 58*(2), 197-204. https://doi.org/10.1109/tce.2012.6227413

Pavlus, J. (2010). The game of life. *Scientific American*, *303*(6), 43–44. https://doi.org/10.1038/scientificamerican1210-43

Povah, N., Riley, P., & Routledge, H. (2018). Games based assessment: The expert guide, White Paper. https://www.psionline.com/wp-content/uploads/GamesBasedAssessment_WhitePaper.pdf

Rahkila, M., & Karjalainen, M. (1999). Evaluation of learning in computer based education using log systems. *ASEE/IEEE 29th Annual Frontiers in Education Conference, San Juan, Puerto Rico*. Article no. 12A3/16-12A3/21. https://doi.org/10.1109/fie.1999.839266

Rupp, A. A., Gushta, M., Mislevy, R. J., & Shaffer, D. W. (2010). Evidence-centered design of epistemic games: Measurement principles for complex learning environments. *The Journal of Technology, Learning, and Assessment, 8*(4), 4-47.

Rupp, A. A., Levy, R., DiCerbo, K., Sweet, S. J., Crawford, A. V., Calico, T., Benson, M., Fay, D., Kunze, K. L., Mislevy, R. J., & Behrens, J. T. (2012). Putting ECD into practice: The interplay of theory and data in evidence models within a digital learning environment. *Journal of Educational Data Mining, 4*(1), 49–110.

Sarner, A. (2013). Why game based marketing is relevant for anyone – who markets anything. http://blogs.gartner.com/adam-sarner/2013/09/13/why-game-based-marketing-is-relevant-for-anyone-who-markets-anything/

Shute, V. J. (2011). Stealth assessment in computer-based games to support learning. In S. Tobias & J. D. Fletcher (Eds.), *Computer games and instruction* (pp. 503-523). Information Age Publishing.

Shute, V. J., & Rahimi, S. (2017). Review of computer-based assessment for learning in elementary and secondary education. *Journal of Computer Assisted Learning*, *33*(1), 1-19. https://doi.org/10.1111/jcal.12172

Shute, V. J., Leighton, J. P., Jang, E. E., & Chu, M. (2016). Advances in the science of assessment. *Educational Assessment*, *21*(1), 34-59. https://doi.org/10.1080/10627197.2015.1127752

Shute, V. J., Ventura, M., Bauer, M. I., & Zapata-Rivera, D. (2009). Melding the power of serious games and embedded assessment to monitor and foster learning: Flow and grow. In U. Ritterfeld, M. Cody & P. Vorderer (Eds.), *Serious games: Mechanisms and effects* (pp. 295-321). Routledge & Taylor and Francis.

Wear, H. E. (2018). A validation of a game-based assessment for the measurement of vocational interest. *Master Thesis*. San Francisco State University and Social Science Institute.

Wiloth, S., Lemke, N., Werner, C., & Hauer, K. (2016). Validation of a computerized, game-based assessment strategy to measure training effects on motor-cognitive functions in people with dementia. *JMIR Serious Games*, *4*(2), e12. https://doi.org/10.2196/games.5696

Wood, L. C., & Reiners, T. (2015). Gamification. In M. Khosrow-Pour (Ed.), *Encyclopedia of information science and technology* (3rd ed.) (pp. 3039-3047). Information Science Reference.

Woźniak, J. (2015). Grywalizacja w zarządzaniu ludźmi [Gamification in HR]. *Zarządzanie Zasobami Ludzkimi, 2*(103), 11-34. http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.desklight-39d01adf-adee-4db4-b5e3-63f7342af988