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The Augmented and Virtual Reality in HRM Development

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Abstract: The purpose of this study is to describe the use of virtual and augmented reality in the field of HRM. The growing interest in virtual and augmented reality applied to HR development. The application of virtual and augmented reality to human resources management and development is also underway. This review is literature study with an elaborative approach. This approach is a methodological effort by organizing the logic flow of the discussion with various compatible literature sources. Reliable literature sources come from journals, books, articles, and other sources relevant to this discourse. The results show that virtual and augmented reality in human resources management and development is still in a very early stage, requiring more in-depth research. This study found that VR and AR can be successfully used in improving workers' productivity, enhancing employee training, reducing costs, making worksites safer and closing the skills gap more effectively and efficiently.

Keywords: Augmented; HRM; Virtual Reality.

Introduction

The rapidly growing number of scientific, technical and information developments determines one of the most successful trends in the development of technology at the present time. The number of users of the Internet and other types of virtual reality (VR) annually experiences a positive increase (Marks & Thomas, 2022). VR creates some resemblance of real life by special devices expressed in digital format (Dunne, 2008). VR is a computational technology generated by one or more multisensory devices (Melo et al., 2020). The user can control, manipulate and explore, interactively and in real-time, allowing an immersive experience in a different and alternative environment (Mendes et al., 2019; Weymuth & Reiher, 2020).

In other side, today's digital era, custolmers have greater access to banking information and options. Thely have a wide choice to choose a bank that suits their needs (Raza et al., 2020). Therefore, banks must developed unique and attractive service innovatiolns for customer, so as to increasing the value of the customer experience and influence their decision to remain loyal to the bank (Barbu et al., 2021).

According to Bogdan and Martin, Virtual Reality (VR) and Augmented Reality (AR) are the latest innovations, which stand out for interactivity and immersion in virtual environments, so that individuals can enter a controlled virtual environment and interact with objects or people, as if they were physically present. Applicability and its potential are evident in several fields of activity, such as the health sector, games, education, tourism (De Paolis & Bourdot, 2020; Osadchyi et al., 2020). Virtual reality (VR), which depicts the simulation world, has undergone numerous technological evolutions in the past decade, as a result of technological advancements including telepresence. Studies have demonstrated that VR features can directly impact user's attitudinal and behavioral (Pleyers & Poncin, 2020). In this study, what is the description of the use of augmented reality and visual reality in integrated human resource management, especially in modern corporations.

Method

This research uses qualitative methods by reading previous research, by exploring journals that conduct

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similar research and reading many books that discuss research like this, qualitative methods by also conducting discussions with various parties who understand this research (Creswell & Creswell, 2017). The methods used in this research can be explained narratively and graphically as described below (Sheridan et al., 2011). The explanation of the research method is carried out in a certain order according to the logic flow of the researcher in translating reality into something that is a proposed solution. In the first stage of the research method using actual and factual situation analysis, as well as considerations based on literature (Farrokhnia et al., 2023; Mitchell, 2006). In this case, it will be possible to find the latest problems on the research topic raised this time, with the literature review method it will get something knowledge that can add insight for researchers.

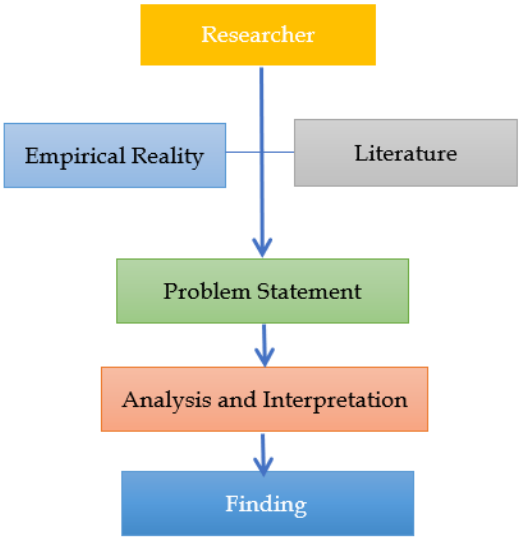

Figure 1. Research Method Flow

We outlined the search strategy simultaneously with the definition of the three previous steps. Information sources can be scientific databases, academic repositories, books or other miscellaneous sources.

Result and Discussion

The usage of Virtual and Augmented reality

There are many scenarios of industrial application of VR and AR solutions, from visualization of prototype technology components to the complex development of interactive workshops for personnel at hazardous industries (Lalić et al., 2020). Virtual reality (VR) represents a three-dimensional computer simulation of real-world environments that can be explored and interacted through a person. These simulations are interactive and are capable of responding to user inputs making it interactive in real time (Gandhi & Patel, 2018; Lv, 2020). The VR is the computer-generated simulation of a three-dimensional image or environment that may be interacted within an apparently real or physical manner by a person with the use of a special digital system, which includes a helmet with a display screen inside or gloves outfitted with sensors (Wang et al., 2015; Xia et al., 2000).

Figure 2. AR and VR in Automotive HRM. Source: Google.com

Unlike virtual reality, augmented reality (AR) implements fragments of virtual reality and incorporates them into real world. Using technology it aligns real and virtual objects while running interactively in real-time (Bonetti et al., 2018; Farshid et al., 2018). Augmented reality (AR) stocks the same concept, but in place of interacting in a nonexistent surrounding (digital fact), AR makes use of the existing environment at the same time as implementing virtual elements to appear as if both are together at the same time (Ahmed et al., 2017; Ducasse, 2020).

AR is a kind of interactive, reality-based display environment that takes the capabilities of computer-generated display, sound, textual content and effects to enhance the user's real-world experience. AR combines real and computer-based scenes and images to deliver a unified but enhanced view of the world (Dargan et al., 2023; El Miedany & El Miedany, 2019). In terms of the comparison of virtual reality and augmented reality, VR is a fully immersive and closed experience with no sense of the real world, while in AR user can see a real world with digital information overlay, which implies that a real world remains central to the experience, enhanced by virtual details (McMillan et al., 2017).

Access to the internet and other digital technologies can further enhance the sense of human connection, especially for people facing physical and social barriers. Inthis respect, VR and AR becomes a transcendent experience, almost mystical in its ability to permit humans to go beyond their known realities. Thus, it is of great significance to examine how new trends in technology, especially VR and AR, are being used for

HRM activities in production systems (Jumani et al., 2022).

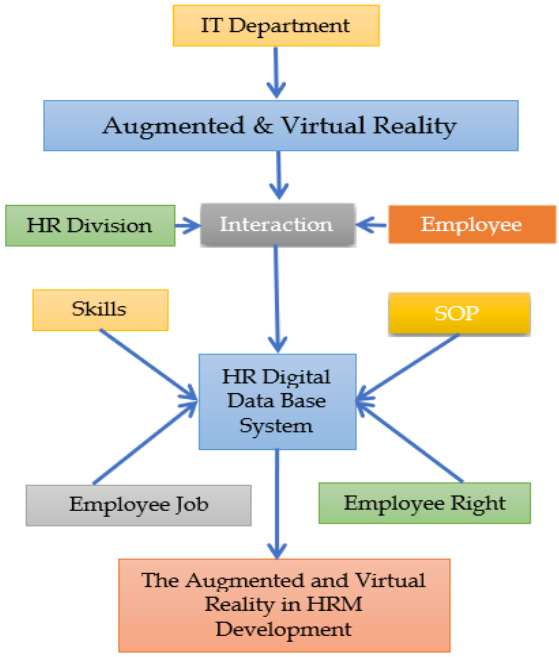

Figure3. Design of AR - VR in HR Development System

But at the present time, the strongest demand for augmented and virtual reality technology comes from creative industries. Some global companies like Google, Apple, Samsung count on VR which in the near future will be able to make a new revolution in life by significantly modifying some areas of business. VR has already penetrated into HR management: many companies use these technologies to improve the practice of interaction with candidates, create engaging game tests for communications inside the company and demonstrate to competitors that they are champions of innovation (Lalić et al., 2020; Lungu et al., 2021).

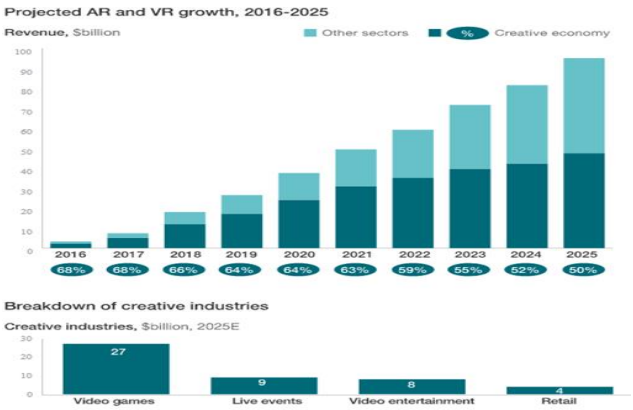

Figure 4. Projected AR and VR growth, 2016-2025. Source: (Lalić et al., 2020)

The Empirical Condition: Putting VR in Work

Virtual reality technology can be used to simulate real world scenarios and situations to replicate situations and help employees more easily prepare for various situations. Organizations can even gamify the whole experience of employees. They could use VR to make the environment more competitive: companies can simulate a sales scenario, for example, a customer wandering through the shop floor, deciding between models (Ramirez & LaBarge, 2018).

Organizations can design competitions, and grade sales employees based on various merits such as price point achievement, close-rate efficiency, etc. to induce a more performance-based environment into the organization. Take the Walmart example of implementing the Employee Onboarding (Training) Game as a company's VR strategy. The director of the HR department decided to introduce a program with virtual reality technologies based on the game in the training system. The Game assumes that a new Walmart store manager who has never seen a Black Friday sale in action will practice his/her skills (Lalić et al., 2020).

To make him/her understand the dynamics of such a busy day, put through an immersive hands-on training; testing his/her ability to handle stress from the horde of excited customers, his/her leadership skills to direct and manage company's subordinates, even his/her emotional intelligence like empathy and tolerance. His/her actions, emotional and behavioral responses to every situation is then captured and measured. This is done by integrating VR hardware with eye tracking, voice recognition, gestures and position tracking and biometric technologies. Good results are shown after the first experience (Lalić et al., 2020).

VR will drastically reduce the economic and time costs for staff training. And using VR in an assessment will approximate the candidate's skills in a particular job to the most realistic. With devices providing VR candidates can freely navigate, move, move objects and solve real problems, but already in virtual space. VR-based simulation applications have been widely used to sustain employer branding. In this regard, the purpose of this study is to examine the crucial role of virtual reality (VR) to leverage employer branding in the industry. It also investigates the effect of VR on E-HRM service quality and HRM effectiveness (Najam et al., 2022).

It is clear that VR and AR can become HR digital support in main operational activities in production management. The coherence among production management and HR strategy systems is substantial for the attainment of business success. However, despite the existing successful examples and results of using VR and AR in the labor market, as well as their benefits in the work of HR specialists, if we consider the cost and complexity of technology implementation, this trend still poses challenges and questions. Therefore, this study could stimulate further research of new potential

fields of VR and AR application in particular companies, sectors, industries, or even countries (Lalić et al., 2020).

Conclusion

The article gives examples of the application of virtual reality technologies in HR management and presents developments that are already actively used in some companies. Despite that kind of a success and demand for VR, there have not been done any significant researches yet. However, a definite basis for designing and developing programs using virtual reality technologies for all areas of HR management has already been formed. VR and AR technologies are not used only in entertainment sector. Moreover, these are proved to be effective and useful tools in managing corporate business processes, in our case, primarily observed in HRM activities. Empirical studies suggest that companies are starting to realize that VR and AR can be used in simultaneously training, recruitment, employee engagement and knowledge retention, in increasing productivity, reducing costs and time and in ensuring safe and secure working conditions. Also, numerous studies show that VR and AR will reduce costs, improve the performance indicators of the company as a whole, and take a strong competitive advantage.

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Conflicts of Interest
In this research, there is no tug of interest and or hidden interests among the researchers. In addition, this research is also not an order from any funder because it is an independent research, or in other words, the research team itself plays a role in preparing proposals, selecting topics, conceptualizing problems, collecting data, analyzing problems, drawing conclusions until the publication stage in this journal.

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