

The Effectiveness of Game-based Learning

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Abstract

Digital game-based learning has emerged as a new technology to address training interventions in the business world. As technology increases and the workforce is seeing a generational shift, business must find alternatives to address training. Training professionals are beginning to recognize the benefits of this training method and the practical application of games in a business context. This article discusses digital game-based learning (DGBL) and how it addresses the needs of the common learning styles described as visual, aural, read/write and kinesthetic. The author explores the changing needs of the different generations in today's workforce and their respective generational preferences. Finally, an explanation is provided as to how global organizations can benefit from DGBL.

Introduction

As business and industry see a continual push to compete on global levels, the need to address employee development and training interventions in the most effective and efficient possible way has become evident. Organizations are seeing the need to retain their talent through various methods. The faces of business and industry are changing, as Generation X is moving into more positions of power and influence and Generation Y is beginning to enter the professional workforce in large numbers. This shift is forcing organizations to address the different and changing learning styles of each generation. Additionally, rapidly changing technology plays a vital role in these interventions. In the 1980s and 1990s, companies were forced to abandon traditional technology such as typewriters for word processors and computers. In the 21st century, companies have been forced to adapt to new and changing technologies such

as games and interactive learning. Although digital game-based learning (hereafter “DGBL”) has been around for decades, business and industry are now beginning to take note of the potential high level of effectiveness this method can achieve.

What is Digital Game-Based Learning?

While the first video game can be traced back to 1961 (Herman, Horwitz, Kent, & Miller, n.d.), the actual origin of games can be traced back as far as 3000 B.C. (“*History*”, 2006).

Throughout the years, there is no question that several variations of games have been used to assist in learning—whether it be logic, math skills or even some of the most basic skills of early childhood. Given the nature of games, it would seem natural that training professionals would use them in establishing set business objectives for training purposes. Combining the most basic components of games into a digital format through technology to accomplish business goals leads to DGBL. Although games have been around for many years, the focus is now shifting for business and industry to realize that games have the power to actually teach memorable and lasting concepts (Billhardt & Kolb, 2008). By understanding the impact DGBL can have on employees, organizations will be able to use and develop this resource to effectively assist in the learning function. When adults view training as both interactive and challenging, it changes the concept of training from something to be endured to something that is anticipated and welcomed.

Digital games can be presented in a variety of ways including multiplayer games, role-playing games, strategy, simulations, puzzles and platform style games (Leveckis & DiRomualdo, 2008). While a single concept can be used, particular business issues can often be addressed by using multiple game concepts. For example, multiplayer games offer tremendous potential for corporate learning as they offer collaborative aspects, and strategy games can assist in supporting future strategic decision making.

Learning Styles and Needs

Even the most basic of games can easily address the varying needs of learners. Although it has been known for some time that an individual's learning style can greatly impact the success of learning initiatives, little credit has been given to the ability of DGBL to address a common typology of learning styles known as VARK (visual, aural, read/write, kinesthetic) (Fleming & Mills, 1992). Through digital games, the learner is able to address each of these four preferences. Effective digital games can use a series of visual representations for the visual need, along with vocal narratives that address the aural need, and text to address the read/write need. Although online learning has addressed these areas for years (Drago & Wagner, 2004), digital games are incorporating a more interactive method of training as well as the ability to address the kinesthetic needs. Most adult learners both need and appreciate some form of feedback that informs them of their progress. Digital games help meet this need and reinforce learning objectives.

Along with learning styles, the needs of adults in a learning environment were clearly described by Malcolm Knowles, in that adults are generally self-directed and learn through experiences (Connor, 2004). While that concept has seemed to hold steady through the years, organizations are faced with technological changes and tightening budgets that alter the traditional training practices. Global companies are being forced to deal with increased complexity and growing expectations such as a more diverse workforce, remote employees and limited resources (Kossoff, 2008). These expectations also transfer to the training and development departments within an organization. Online training has already proven to be a cost effective, flexible and interactive way to address training needs with organizations (Jewell, 2007). The expense of transportation, lodging, meals and expenses for trainers and participants

has led some organizations to pursue online training as an alternative to traditional classroom-based education. By simply adapting current online training initiatives into game-based learning situations, the organization is opening a door for further learning success. Games can often increase concentration, sharpen reflexes and create a positive and memorable experience resulting in higher learning transfer (Billhardt & Kolb, 2008).

The Generational Gap

Another challenge faced by global organizations where DGBL can assist is the fact that today's workforce spans across three or four different generations. Generational differences can affect everything including motivation, management and productivity (Hammill, 2005). All these factors apply to an organization's learning function and effectiveness. Learning professionals must effectively use DGBL to address the varying needs of these different generations, which have been well-documented in recent years. The baby boomers, born between 1946 and 1964, generally prefer to work in an environment that makes them feel needed and valued; Generation X, born between 1965 and 1980, needs personal freedom but prefers an environment with structure; and Generation Y, born between 1981 and 2000, needs an entrepreneurial environment with goals in mind (Hammill, 2005). These differing generational factors can make learning initiatives a challenge.

Even as the youngest generation in the current workforce, Generation Y is becoming an ever-present group within growing organizations. It may seem obvious that Generation Y is technologically savvy and their presence in the workforce can be attributed to the ever growing demand for online learning. Adults who have grown up with computer technology and interactive learning typically expect training to be presented in a manner that is familiar to them. This group also needs information to be presented in a short and clear manner (Rose, 2007). Due

to these factors, DGBL appears to be a natural alternative for presenting training initiatives to this generation, and it also addresses the needs of the older generations in varying ways.

As the baby boomer generation seeks personal fulfillment and an environment that enables them to work efficiently, training can sometimes seem tedious and unnecessary (Hammill, 2005). By presenting training through DGBL, organizations can meet the need of personal fulfillment through accomplishing tasks within the game setting. This method also allows for time-sensitive and efficient alternatives to the traditional classroom experience that some baby boomers may be accustomed to.

Furthermore, DGBL can meet Generation X's desires for challenge within work and self-reliance (Hammill, 2005). This generation is motivated by new challenges and opportunities to build new skills (Nagle, 2007), which is a fundamental element of DGBL. This method also presents the opportunity for Generation X to be self-reliant in the completion of a training task as DGBL can be set up for independent completion and progress. The challenge now falls on to the developers of digital game-based training aides to ensure that all generational factors are considered.

Global Needs

The increase of globalization within organizations has presented a need to address differing cultures, borders and geographical gaps. Training professionals must understand these needs and be able to serve global markets by understanding the specific business needs and knowing how to use technology to improve service and reduce costs (Kossoff, 2008). These needs present a challenge in the traditional setting of training and development. Through the use of appropriate DGBL solutions, geographical gaps can be addressed by connecting employees in different areas online to compete and work together. Organizations must also take into account

cultural differences when developing DGBL solutions. Although some games are universal, others may not be appropriate for differing parts of the world. If these cultural differences are addressed properly, organizations can greatly benefit through DGBL.

Conclusion

Training and development has seen many changes throughout the years. As individuals progress through organizations and leadership changes hands, training professionals are challenged to provide the best alternatives possible. Training professionals must take note of the differing factors and the new challenges presented. Organizations are encountering professionals with various learning needs and expectations. Generational gaps are now more prevalent than they have ever been. Successful global organizations are forced to not only recognize these challenges but embrace and address these needs. Through the use of DGBL, a successful organization can meet the various needs of their employees. While the simple concepts of games are a time-honored tradition, training professionals must recognize the ability that digital games have to meet the various needs in the workforce. Digital game-based learning provides the opportunity to develop situations and challenges through technology that allow for everything from team-building to independent work. The challenge is now for organizations to recognize the various benefits of DGBL and incorporate this method into their training and development practices.

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