

# Disruption in teaching & learning: experiential learning and gamification in practice

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## Abstract

With the workforce seeking to improve itself in every way, so should our educational system. This article examines the importance of the use of technology and the right learning platform in higher education and how they can be used to propel students into the working environment. Students who are equipped to learn hands on have more experience than learning in a formal class setting. In addition to technical skills, students not only need to understand the 70:20:10 learning model, but are also required to develop the 4 C's(Four C's) skills that have been identified by the United States-based Partnership for 21st Century Skills (P21) as the most important skills required for 21st century education. The concept of pedagogical platform is used so as to allow students to get a leg up in a working environment where experience and team communication skills are some of the most important criteria employers look for.

**Keywords:** Technology, Higher Education, 4 C's, Experiential Learning, Skills, Workforce, 70:20:10 Learning Model

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## Introduction

The world has changed and evolved in many different ways, impacting the business market, job market and essentially, the way businesses are run. The use of technology is constantly changing our lives, cultures, and behaviors, bringing us closer by providing instant connections across the world. In just a few clicks, we have access to a plethora of knowledge right at our fingertips. With more than 3.8 billion people using the internet as of 2017 (Internet Live Stats, 2017), social media and the use of the internet have made our younger generation more tech-savvy.

Due to the increasing use of digital technology in the workplace, there is a need for it to be incorporated into the education system, as education forms the basis of a nation. According to Holland (2014), it is important to integrate emerging technologies in higher education as not doing so will lead us “marching towards obsolescence as we fail to adapt to changing educational goals,

objectives, and new technologies.” The difference between learning and being an innovative thinker is the measurable value to the companies and employers of the business world where improvements are always made.

### **Learning and Innovative Skills in the Modern World**

Holland (2014) states that “The factory and banking models are no longer relevant and students are now demanding interactive, relevant learning experiences, as they well should.” The optimal resource for successful learning is shown by the 70:20:10 learning model. Developed by McCall, Lombardo and Eichinger at the Center for Creative Leadership beginning in the 1980’s, the model indicates that 70% of our knowledge comes from experience, 20% comes from social learning, while only 10% of our knowledge comes from formal education. The 70:20:10 framework is especially true in today's dynamic environment where disruption and change are the constants. Yet, how many universities and educational institutions have actually morphed themselves into this 70:20:10 model? Most universities acknowledge the value of added knowledge that comes from experiential learning, however, they still use the traditional “Powerpoint” or “e-learning” teamed with the occasional “labs”, “workshops”, and “field trips.” Unfortunately, providing such mode of learning in which students learn by experience may be impractical, costly, overwhelming or even time-consuming.

It is important to note that in the modern workforce, employers focus on experience (Teodora et al, 2013) and prefer employees who can work well with others (MacDermott, 2017). According to Raymond et al (1993), employers are looking for team players, innovators, and risk takers alongside active experience. These criteria remain true to this day. Having technical skills and experience are important, but “21st century skills” are crucial in occupational success. The increased emphasis of creative individuals who can think critically and cooperate together comes with the nature of the workforce where change is constant (American Management Association, 2010). These crucial learning and innovative skills are presented by assessing the 4 C’s which are, according to Partnership for 21st Century Learning and Pearson, Critical thinking, Collaboration, Communication, and Creativity (American Management Association, 2010).

In a survey given to 400 employers, more than 90 percent identified **critical thinking** as one of the top skills needed in students in higher education (Casner-Lotto & Barrington, 2006). Ventura, Lai, and DiCerbo (2017) offers a broad and applicable definition of critical thinking in today’s terms: “a multifaceted skill that involves problem-solving in the face of ill-defined information.” It is the ability to analyze, evaluate, form logical conclusions, and make decisions based on the information given. Using a pedagogical approach or “active learning” on teaching critical thinking, Rimiene (2002) found that students randomly assigned to this course exhibited significant improvement in analysis, evaluation, inference, inductive reasoning, and deductive reasoning than those who did not take the course.

Under **collaboration**, students work in teams to achieve a goal collectively, a skill that is sought out by employers. According to Morgeson, Reider, and Campion (2005), when individuals are placed into teams, those who possess higher collaborative skills will lead to more successful teams. In an expanding marketplace that relies heavily on technology, the benefits of using technological devices as tools help students use the 4C’s effectively to develop higher order thinking.

Anyone can excel in their area of expertise whether it is engineering, journalism or business, but it can only benefit them if they are able to share their ideas coherently and understand what others are saying. Robles (2012) states that effective **communication** leads to overall success of businesses. Considering these facts, employers are well aware of the values of good communication, which are the ability to deliver clear messages with a desired outcome in mind and listen attentively to others. Research has established role play as an effective approach in learning good interpersonal communication. Some of these research are represented in customer service (Rautalinko & Lisper, 2004) and social work (Rogers & Welch, 2009).

In order to provide the maximum output in any business, creative thinkers are needed to brainstorm more efficient ways to suit the market's needs. The integral part of **creativity** lies in the ability to come up with useful and original ways to solve problems as part of our daily life (Batey & Furnham, 2006). Creative thinkers are able to understand the limitations in reality and that failure is a learning opportunity towards innovation.

According to the study of Pew Research (The Future of Gamification), technology consultancy Gartner has projected 50% of corporate innovation will be “gamified” by 2015. Another consulting firm, Deloitte, cited gamification as one of its Top 10 Technology Trends for 2014, predicting “Serious gaming simulations and game mechanics such as leader boards, achievements, and skill-based learning are becoming embedded in day-to-day business processes, performance, and engagement.”

## **Methodology**

The research required the use of a pedagogical platform which would incorporate the 4 C's, Critical thinking, Collaboration, Communication, and Creativity that could be applicable across a variety of students, regardless of background. The researcher's identified MonsoonSIM as a suitable platform, as it was built on a SAP based ERP ideology, using 12 core business modules. Monsoon Business Simulation or simply MonsoonSIM, is an Experiential Learning Platform developed to help students learn Enterprise Business Processes involving Integrated ERP Concepts by performing various business transactions. Through its fun and exciting interactive cloud-based, students experience managing virtual companies in real time, and learn how 12 different core business modules consisting of more than 200 business concepts from retail, wholesale, finance, production, material requirements planning, warehouse and logistics, forecasting, procurement, asset maintenance, marketing, human resources, and customer service are interlinked. The winners of the game are based on simple yet transparent scoring systems, which is flexible enough to be changed based on the educators needs.

Since the system is cloud based, and the students were from international settings, the research was carried out based on a online feedback mechanism as well as an interview with the regional winning team. The feedback from academics and students were then assessed based on the four concepts, of critical thinking, communication, collaboration and creativity. Each of these concepts played a significant role in determining the winning team, as summarised in the next session: Results and Discussion.

## Results

In order to win the game, the students would need to assess their products, strategies, and competition. The game depends on scenario building, with the decisions and speed of the competitors as well as the focus on a more local business as compared to an international setting, as well as the ratio of management and focus. The strategy that the participants would use also mattered, especially in terms of managing their prices, costs (inclusive of a balance between storage cost, penalties, and procurement cost) as well as their manufacturing and other facilities. This is especially crucial when the teams start to bid for projects, which is one of the major profit making business strategies in the game. The ability to deliver whilst balancing the requirements by individuals, corporates and the bigger projects, together with the internal mechanisms are crucial, hence setting the scene for a business simulation which reflects a real life scenario for the students. However, communication and collaboration between the team members were also required, as split second decisions would need to be made based on opportunities that arose as well as to ensure that collaboration between members and modules remained strong. An example would be that, over purchasing may at times cause cash flow issues if it was not matched appropriately against the revenue and cash inflow.

Feedback from various academics who had used MonsoonSIM as their teaching and learning tools, reflect the elements mentioned above in their feedback. The interaction of modules and scope assisted them to teach students the interrelated nature of business decisions, and to understand the impact of X on Y. Having the system being built on a replica of the traditional ERP systems, and being realistic in terms of its orientation to a real life business setting, provides a strong sense of understanding of the holistic picture. They reaffirmed the use of business simulation as an effective method of instruction, and had noted the positive response from their own students in being to apply management theories and processes better strategically, providing a healthy and fun manner to challenge each other in the classroom without being overly complex.

Likewise, a similar tone was noted when assessing the students' feedback as well. Students mentioned that they were able to assess the cause and effect of their decisions, which enabled them to identify the drivers behind their profits based on the execution of daily activities, transactions, functions, processes and decisions. Students also compared traditional methods of teaching and learning to MonsoonSim, being the experiential learning platform. Using the simulation, they were able to apply various strategic and management theories to understand the application in a simple and fun manner. To sum it up, the researchers use a phrase from one of the participants "We have learnt how to think". All participants had encouraged the use of this platform as part of the teaching and learning platform as well, and to be made part of their official curriculum.

In order to assess further the level of complexity and applicability of the platform, the research assessed the perception of the 2015 Grand Final winners. The winners summed up their experience as "There's no absolute winning strategy in MonsoonSIM. To achieve the highest profit is to analyze every situation arising from precise real-time information, make a quick decision, and develop a flexible strategy". Their feedback allowed to the researchers to reaffirm both the critical thinking and creativity concepts which had been embedded into the game. It was interesting to note their experience at the different levels as well as the mistakes that they had learnt from in their journey to becoming winners. Though they were sceptical at first about the entire concept, they found that could adapt and excel within a few virtual days of the game, beating the other teams with a considerable margin during the first playoff. However, when competing against stronger

teams in the campus final, they had faced difficulties with the other teams competing for market share in B2C and B2B, and covering their expenses. However, they were lucky to be able stick together and compete, using their solidarity and teamwork to motivate each other and keep their spirits high, even at a point when they were doing badly, hence the crucial need for collaboration and communication amongst team members. The team were runner ups which provided them the ticket to the National Final's. They used every lesson learnt to be able to become the winners at the Grand Finals, which included their lesson from the campus playoff, where the failure of mishandling of one division could reduce the performance significantly, and to make timely yet matured decisions to respond to the markets fast moving and fluctuating conditions. They applied theories from their text books diligently, to understand the simulation based on an oligopoly market or a competitive market, and the various strategies to incorporate input output ratios and best formulas.

Therefore, the researchers were able to conclude that by using business simulation via a gamification platform, students were able to incorporate the 4C's to achieve a better learning experience and outcome. The 70:20:10 model is also clearly seen in this research, especially in terms of the winning team's experience where they clearly demonstrated the experiential – social – formal relationship components well.

## **Conclusion**

To stay afloat in the workplaces' rapid changes, there has been an increase in recognition for the above skills so that students may not only thrive in school and work but also in life. In reality, these skills overlap and work side by side to help those involved manoeuvre through daily tasks and achieve academic and occupational success. Experiential learning platforms such as MonsoonSIM allows students to work collectively to reach the same goal, similar to a company and to build up a business based on role play, allowing them to learn technical skills while developing the 21st century skills of the 4 C's. In doing so, students are able to work together as a team to solve life-like problems in the business world, thus preparing them for their future working environment. Therefore, it would be recommended that universities and learning centers incorporate the concepts and themes discussed in this paper, to be able to communicate and extend the teaching and learning platform to react towards the needs of the youth and younger generation.

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