

# POSITIVE EFFECTS OF GAME-BASED LEARNING ON STUDENT PROJECT WORK IN HIGHER EDUCATION

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**Abstract:** The aim of this paper is to discuss the correlation between using gaming techniques and improvement of critical thinking and team work skills. Game-based learning has not been extensively used in higher education despite current literature that implies that game-based learning enhances better understating of theoretical concepts and practice. My course on *Leadership and team development in art management* combines task -oriented learning, active learning strategies and game-based learning to help students of art management to develop critical thinking and team work skills. Apart from the theoretical frame of the course students are required to complete an art project working as a team throughout the semester. Playing the game *Six thinking hats* students think "outside of the box" which enhances self-awareness and team interaction. In this research, the focus group discussion, observation technique, field notes and personal reflections were used. Positive research findings are significant for innovating teaching and learning in higher education classes.

**Keywords:** *game-based learning, active and experiential learning, critical thinking, interdisciplinary approach, innovations in teaching and learning.*

## INTRODUCTION

One of the main goals and responsibilities of higher education teaching is to develop an atmosphere that will evoke from the students their very best academic growth and achievement. It is a teacher's duty to determine the current conception and the interpretation of the existing theoretical frameworks in correlation with practical use of student's work outside of the classroom. The

question poses itself if the improvement of critical thinking and teaming skills would enhance better understating of theoretical concepts and practice.

If this is the world of highly demanding markets in the professional art business, students of art management should develop, mature and grow in two different areas of expertise. They should acquire managerial work and teaming skills as well as in-depth understanding of critical thinking

that would prepare them adequately for multiple tasks that require interdisciplinary skills in the field of professional art management. Despite current literature that implies that game-based learning enhances better understanding of theoretical concepts and practice, game-based learning has not been extensively used in higher education. The aim of this paper is to discuss correlation between using gaming techniques and improvement of critical thinking and team work skills.

#### PERSONAL REFLECTION ON DEVELOPMENT OF GAME-BASED LEARNING IN PROJECT MANAGEMENT CLASSES

The interest in the topic of the improvement of critical thinking and teaming skills for students has been influenced by my personal teaching experience and interactions with students through various artistic projects over the years. My course on *Leadership and team development in art management* combines task-oriented learning, active learning strategies and game-based learning to help students of art management develop critical thinking and team work skills.

Apart from the theoretical frame of the course students are required to complete an art project working as a team throughout the semester. Using the gaming technique in preparation of the project work outside of the classroom has helped the students think “outside of the box” which enhanced self-awareness and team interaction.

My course on *Leadership and team development in art management* is designed with an interdisciplinary approach combining theories of innovation, theories of leadership and team development with strategies of project management. The goal of this course is to provide the students with deeper understanding of significant relations between theory and practice within the field of art management. Because of the nature of this course incorporating game-based learning into my curriculum has been showing positive effects on students’ quality of work throughout the semester.

#### SCIENTIFIC FRAMEWORK FOR USING GAME-BASED LEARNING IN HIGHER EDUCATION

In my class I use the adapted version of the game *Six thinking hats* by Edward De Bono (1993) designed to improve creative thinking, team collaboration and innovation. As Chris Bilton (2007) points out this game coincides with De Bono’s attempt to challenge stereotypes of roles that each member has within the team as well as the organizational habits and management strategies.

According to De Bono (1993) critical thinking is described as the process in which one is able to analyse, explain and reconstruct his or her own thoughts and beliefs. Through this process one also evaluates the information that he or she receives. It includes problem solving, decision making, rational thinking, reasoning, intelligence, knowledge and experience.

Through the game *Six thinking hats* students are searching for alternative solutions which provides them with deeper understanding of self-awareness, exchange of opinions and cooperation among the team members (Bilton, 2007).

Another reason why games such as *Six thinking hats* could be very effective in developing an atmosphere that will evoke from the students their academic growth is the lowering of so called “affective filter”. As Stephen D. Krashen (1982) points out in his research the “affective filter” is an imaginary wall that is placed between a learner and a teacher. If the filter is on, the learner is blocking out input which causes the high level of anxiety, low level of self-esteem and motivation.

He further argues that the “affective filter” is an impediment to learning or acquisition caused by negative emotional responses to one’s environment that can prevent efficient processing of the learning input. In his research, Krashen (1982) states the two issues that prevent the lowering of the “affective filter”. The first issue is not allowing for a silent period when the question is posed to a student. If the teacher expects the student to speak before he or she has received an adequate

amount of comprehensible input according to their individual needs, the “affective filter” will not be lowered. The second issue is correcting student’s errors too early in the process of their learning of new material.

Other research studies such as David John Wood (1999), Matt Wicks (2000) and Kristen Lems (2001) suggested different tools such as movies, games and music to reduce “affective filter” by lowering anxiety while increasing motivation and self-confidence. In this research I have used the game *Six thinking hats* creating an environment where students can express themselves freely which helped them to become more creative in their art project work throughout the semester.

#### **METHODS FOR RESEARCHING THE CORRELATION BETWEEN GAMING TECHNIQUES AND IMPROVEMENT OF STUDENT ART PROJECT WORK**

The acquired data presented in this paper are taken from the qualitative research where I used focus group discussion, observation technique, field notes and personal reflections. Eleven students as members of different student teams participated in focus group discussion about the topic of the use of games in preparation for their art project work. In this paper, quotations from the focus group discussion are used to illustrate the positive correlation between gaming techniques and improvement of critical thinking and team work skills in student project work.

According to Michael Quinn Patton (2002) there are three different ways of approaching the qualitative interviewing process which include the informal conversation, general interview guide approach and standardized open-ended interview. In this research the open-ended interview approach has been used since all participants in the focus group discussion are graduate level students of art management with professional experience that are deeply involved and affected by the issues that were discussed.

Throughout this paper the words of the students are juxtaposed with excerpts from the scientific management, theories of organizational behaviour, educational psychology and my own observations.

#### **THE CORRELATION BETWEEN GAMING TECHNIQUES AND IMPROVEMENT OF STUDENT PROJECT WORK**

Because of the interdisciplinary nature of the course *Leadership and team development in art management* the theory of scientific management and human relations should be mentioned as the starting point of making the correlation between the use of gaming techniques and improvement of student project work.

As William J. Byrnes (2009) points out the major failure of the classic approach to management is the lack of understanding the concept of the human factor in production work. He further argues that scientific management theorists interpreted the failure to successful task accomplishment as the employee’s stubborn resistance to change. This is the reason why other researchers turned their attention to what was then the new field of psychology and tried to apply some of the concepts and principles from that field to management theory in order to make organizations and people work more productively.

As opposed to classical literature on management where managerial roles are often discussed as disconnected lists of roles suggesting that managers focus on one of these roles to the exclusion of others, Henry Mintzberg (1989) presents managerial roles as an integrated model. He believes that all six roles including controlling and communicating, leading and linking, doing and dealing must be applied in any type of managerial work. Along with this idea, critical thinking and team work skills were found to be essential for the professional career development of the cultural managers in the 21 century.

Throughout my research work and current

teaching in the area of art management, one of the central questions still remains the same: does the current curriculum in higher education prepare the students to become effective and powerful communicators in creating career success as managers of today?

In order to become more efficient and powerful communicators, students need to have a deeper understanding of self-awareness and exchange of opinions with others. As mentioned before in this paper the game *Six thinking hats* stimulates students to search for alternative solutions and think "outside of the box" which provides them with deeper understanding of self-awareness, exchange of opinions and cooperation among the team members (Bilton, 2007).

Since this game creates the environment where the "affective filter" is reduced and students are freely expressing themselves it also stimulates their creativity as one of the essential parts of their art project work throughout the semester.

The positive correlation between creativity stimulation and the improvement of student's art project work was expressed by the following participant in focus group discussion:

*Student 1:* "... I like it when we do problem-solving games because they stimulate me to think »outside of the box« and often times I reflect on those situations at our project work where one of the members on our team acts like one of the characters from the game..."

Another response from the student was related to the connection between the game and their creative process on art project development:

*Student 2:* "...There were times when we lost our ideas about the program...it felt like we were not moving in the »right direction« as a group... Every member had a different vision for our project and that is when we applied the game *Six thinking hats* that we did in the class and tried to look at our problem from six different angles...At the end we were able to create new ideas and branch out in different directions in our project..."

As it was discussed in this research, creativity stimulation plays a significant role in the improvement of student's art work therefore it is prudent to include game-based learning in the current curriculum of art management courses. By reducing the "affective filter" and stimulating their creativity the teacher will provide an environment where students can express themselves more freely which would help them be more creative in their art project work.

Another important issue that has been discussed in this research was the effective use of game technique in the classroom. Some of the key issues that were addressed in our focus group discussion included questions such as what games do we choose to introduce to our students? What is the purpose of the game that we use? What goals are we trying to accomplish by introducing this game to our students?

In search for those answers there were couple of insightful responses from the participants in focus group discussion:

*Student 3:* "I don't like to participate in any kind of game activity within the classroom because it seems childish to »play games« at our level of education. When I come to class I expect to gain an in-depth knowledge of theory and science not to »play games«. It seems like a waste of time... it is almost insulting to me..."

*Student 4:* "At first I was skeptical to participate in the game *Six thinking hats* because it seemed childish to me...but when the teacher explained the purpose of the game where the main goal is to improve our communication skills I began to understand the connection between theory and practice. Since we were discussing the importance of communication among members of the team that results in productive meetings and work. It seemed appropriate to use this game as an example of better communication..."

As shown in the previous two examples when introducing the game to students it is very important to make the connection between theory and

practice. In that case the students will be motivated to participate in the game and transfer that experience to the learning process of theoretical framework. It is highly suggested to end the game with discussion where the students will start making connection between theory and practice.

In discussion after the game *Six thinking hats* the students use self-reflection and analysis connecting the game with real life situations when working within teams. The positive effects of these discussions is expressed by one the responses of the participants as follows:

*Student 5:* "...Often times I go to workshops/ seminars where we play games but we never have a follow-up discussion afterwards so we lose the purpose of the game... here I feel that I can really make the connection between the narrative of the game and my real life work experience".

*Student 6:* "After our discussion I always feel as if I have learned more about myself... my strengths and weaknesses that help me realize what roles are good for me to take when working in future teams".

These are some of the reasons why it is crucial for students to understand the purpose of the game and how it will relate to their learning process. Therefore it is a teacher's duty to determine the current conception and the interpretation of the existing theoretical frameworks in correlation with practical use of student's work outside of the classroom. Also the game that has been used in the classroom needs to be adjusted to the student's needs and topics that have been covered in the classroom. As it was shown in this research the purpose of the game *Six thinking hats* was to prepare students for their creative work on their art project by developing tools for their critical thinking and teaming skill under reduced level of "affective

filter". One of the main goals for using the game *Six thinking hats* was to develop an atmosphere that will evoke from the students their very best academic growth and achievement.

## CONCLUSION

Even though game-based learning has not been extensively used in higher education despite current literature that implies that game-based learning enhances better understating of theoretical concepts and practice there should be more research on this topic. Positive research findings are significant for innovating teaching and learning in higher education classes.

As teachers we have the responsibility to accept change as a crucial part of our teaching careers, constantly adapting to new challenges that our students are facing in the future and help them accept those changes with contemporary approaches to knowledge and training.

Contemporary theorists of scientific management argue that people working in major companies must be aware of the fact that strict discipline and obedience to their employer obstruct any kind of change or innovation. Shouldn't the same argument apply to higher education where the concept of ex-cathedra teaching hampers student's creativity and innovation?

Teaching innovative classes at higher education levels it is our responsibility to prepare the students to take an active part in current changes in society by becoming well trained professionals in the markets of creative and innovative projects. By doing so it will help them to become effective and powerful communicators in creating career success as young entrepreneurs of today.

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