

# Academic Gaming in the Classroom

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**Abstract:** Academically oriented games and activities have been gaining a lot of notoriety in recent years as a pleasant and fun filled alternative to standard lecture and teaching practices. While lectures will retain their status in the classroom as an astoundingly functional method of teaching students information, informal teaching methods such as academic games and cross word puzzles have shown to have much in terms of social and academic benefits. By analyzing article and journal entries interested in the educational benefits and hurdles of interactive social games such as Jeopardy, Concentration, and Quiz bowls on active learning; with primary concerns being focused on retention of academic information and general satisfaction of lessons revolving these sorts of games. Through this paper we wish to present an argument that reaffirms the merits of informal games used as instructional techniques, especially that of "Jeopardy" which is the primary focus of our sources, and enlighten readers on what the aforementioned benefits are, and how to avoid issues arising from these practices application in the class.

**Keywords:** *Teaching Practices, Games, Learning Methods, Jeopardy, Active Learning*

## Academic Gaming in the Classroom

In an academic environment Active Learning Games are often used as a method of changing up the standard lecture orientated curriculum that can, at times, become rather monotonous. Student's more than ever are demanding of a learning experience that is more active and immediate, and one that is academically stimulating while still retaining a certain level of entertainment value (Ritzko & Robinson, 2006).

Academic games can have the potential to provide this experience when used to augment the standard teaching curriculum. Primarily used in test preparation, Jeopardy is one such game that has become rather popular when used as a studying augment due to its allowance of students to cooperatively and competitively review

previous material. But, what are the benefits that these games can provide? How much do they effect retention and classroom satisfaction for the students participating them? What are the potential difficulties of these games use for teachers (Afari et al., 2012, Webb et al., 2012)? It is the purpose of the paper to attempt to explain both the positives and potential negatives of "Jeopardy" style teaching practices, and in this attempt hope to show the extreme benefits that they can provide to students when appropriately used; and hopefully allow students to have a lot of fun in the process.

Before continuing to discussing the academic benefits to be had with through the use of active learning games (such as Jeopardy), it seems prudent to first discuss the negatives that can potentially arise from the induction of these procedures into a teachers curriculum. Both Rotter (2004), and Webb et al. (2012) invest considerable effort to discuss the potential issues that arise from the implementation of these games for students. For simplicities sake these issues are going to be split into two different categories, functional and social, and will be discussed in that order.

To begin functional issues are exactly what they sound like, issues with the actual application of the game into a teacher's curriculum for whatever reason. Be it budgetary, time constraints, or simply class size interfering with activity's desired result, functional issues can most assuredly represent a consistent (and numerous) struggle for any teacher to work around.

For many teachers simply finding the time to plan for, and implement, these non-traditional teaching strategies can be profoundly difficult, and can potentially lead to the avoidance of such methods (Ritzko & Robinson, 2006). Deterred, educators may fall back upon the standards of pencil and paper worksheets which can lead to a perceived, or actual, inflexibility of their academic curriculum (McDonald & Hannafin, 2003 as cited in Afari et al., 2012). There are many of these little problems that an educator has to face in order to best provide the active gaming learning

experience that their students deserve, and while it may seem a daunting task these sort of obstacles must be overcome if a teacher wishes to provide a diverse, engaging learning experience for their students; and with the constant progression of technologies the experience is becoming easier to provide.

Social issues of "Jeopardy" (and similar activities) primarily are centered on the principles of participant engagement, and the assurance that the lessons being taught through these methods is being equally beneficial to all students involved. Any curriculum created must be tailored to the members of the class it is meant to be provided to for maximum effect, and that rule is no different for interactive games. Poorly planned or maintained games can unbalance the learning experience due to both the social nature of the game and the increased noise level, which consequently can severely diminish the lesson being presented (Ritzko & Robinson, 2006). These type of detrimental effects can affect the individual as much as it can the class as a whole, and requires intimate teacher regulation of the game to prevent distraction or confusion. On top of all this, most educational games, especially Jeopardy, are competitive in nature. While this can certainly be an incentive for some participants, and get them even more involved in a friendly game, there is also the ever present concern that the competitive atmosphere created will have the opposite effect on other students.

The pressure to win, or the fear of losing, can be extremely destructive to the learning experience of some students (especially those that are perhaps deterred by competition), which of course defeats the purpose of the fun, low tension learning activity that was implied by the game (Webb et al., 2012). Rotter (2004) takes this inadvertent exclusion of student's one step further by addressing potential effects on children with learning disorders. While admittedly the student's discussed in this article are statistically younger than those addressed in the others its' message is rather omni-important, and should certainly be heeded. Any learning activity taught in school must be beneficial to all students taking part in it.

If a student is obtaining less of a benefit from the activity (or none at all), whatever that reason

may be, it is the responsibility of their teacher to intervene and change the activity so as to better provide for that student. Luckily, the beauty of Game's is that their flexible, and can be easily changed if need be to include every participant, but the constant attentiveness of the teacher is required for this change to happen.

In contrast, one of the major benefits to games such as Jeopardy is that they can provide a greater level of engagement and satisfaction for students, which is of great importance to educators. Positive satisfaction of materials can promote further involvement by students in academics, and those students who have a positive experience with a certain topic are potentially more likely to continue pursuit of that topic in the future (Afari et al., 2012). To discern this and other factors, a study performed by Afari et al. focused on the impact of gaming on both student satisfaction, and retention of information; the latter of which will be discussed later in this paper. 352 students were gathered from 33 United Arab Emirates college classrooms, and a pre-post mathematics test design was invoked with both English and Arabic translations.

A jeopardy style game was used on 90 of these participants, and the remainder were provided with a standard lecture presentation to measure the differences in the results of both teaching methods. According to Afari et al. student's who participate in games statistically perceived more teacher support, involvement, and general enjoyment of curriculum presented, resulting in increased satisfaction. Another, yet similar, study performed by Webb et al. (2012) concerning eight PGY2 General Surgery Residents, resulted in similar results. While this study had significantly less participants, students in this study still reported higher learner satisfaction, and an improvement when working with their peers. Overall, for both studies, the results seem positive to the use of Jeopardy as a studying aid in classrooms, and thusly support the idea that provided care is taken upon implementation of a game it can be an extremely positive influence on student motivation and moral.

"Rather than passive regurgitation of concepts, games allow students to engage in an interesting deviation from the classroom norm" (Grabowski and Price, 2003... as cited in Afari et

al., 2012)(133). In both of the studies referenced before (Afari et al.; Webb et al., 2012) the primary study of interest was not only that of student satisfaction, but also the comparison of how much information is retained from the Jeopardy activity in comparison to the amount retained from a standard academic lecture. This paper has already briefly touched on the effects on student involvement that games can provide, especially as a studying activity, but when combined with some sort of personal incentive (a miniscule amount of extra-credit can suffice) the competitive nature can provide striking results motivation; and consequently retention. The subsequent environment created, provided it is properly managed to include all participants, can improve student attitudes, and decreases stress for any upcoming test (the reason you would use such a Jeopardy system). In the pre-test post-test study performed by Webb et al., and its' eight PGY2 Surgery Residents, a marked improvement in delayed-posttest medical information retention with an average score of 82.6%. In comparison to those who did not participate in the jeopardy game whose average score was 74.5%, even assuming that there are some outlying factors that assisted those who participated in Jeopardy after the conclusion of the test, the difference in results is impressive; and assuredly deserves further study. While admittedly studies of this nature are still rather new, it does seem that alternative forms of interactive curriculum (such as games) has some serious merit towards academic retention, and should be highly considered for use.

In conclusion, while there is room for improvement on the studies used, and further

studies in the future, the merits of Games such as Jeopardy should at least be a little clearer now. Stressing the importance of learning environments are social and active is important, finding alternative and engaging ways of presenting information is important, and getting students involved activities (whether they be games, debates, group discussions, or other activities) is most assuredly important in a world of ever growing technology and standards. While the method of use is always important to consider, and the recourses needed to perform interactive activities is always a concern, if performed properly games (especially Jeopardy) can and will have a positive influence on Academics; and above all they're darn fun!

### References

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