

# **Pedagogical Impact of Daily Game Playing in Online Courses**

**Kenneth Henderson**  
**Morehead State University**

**Barbara Lyons**  
**Morehead State University**

*Educators in the digital age look at devising innovative methods to increase the interest and involvement of online students. This study presents a daily game played by 428 students enrolled in 17 business marketing classes. The game proved to be an effective strategy to integrate course material and positively influence student learning motivations. Results showed a clear and strong relationship between students' participation in the daily game and learning outcomes and course engagement. Instructors can adapt this online game to any course topic to create an effective learning environment for peer interaction, for learning motivation and for course-directed learning interest.*

## **INTRODUCTION**

In recent years the growth of distance education delivered online has been phenomenal and has radically changed the landscape of American college campuses. Online learning has developed into an option students expect. For example Rich and Dereshiwsky (2011) report that more than one in four or over 4.6 million higher education students now enroll in at least one online course. The potential of online learning has been described as the "single biggest change in education since the printing press" (Chubb & Moe, 2012).

But the popularity of online distance education is not without drawbacks. Online learning is most suitable for independent, self-motivated learners but commonly attracts students lacking these characteristics (Bocchi, Eastman & Swift, 2004). Some studies suggest that the online learning environment can lead to isolation, frustration, boredom, overload, and low course completion rates (Berge, 1999; Hara & Kling, 2000; Northrup, 2002).

Although the theoretical aspects of online learning have been extensively researched, Bird (2007) notes that little practical advice is available to enhance online course delivery. Educators need to build interactive relationships with students to bridge the physical and psychological gap that occurs in online courses (Chute, Thompson & Hancock, 1999). This paper describes a practical teaching heuristic that overcomes the psychological and communication gaps created by the transactional distance of online learning.

## **PEDAGOGICAL PROBLEM**

Durrington, Berryhill, and Swafford (2006) suggest students demonstrate more positive attitudes and higher levels of performance when online classes are highly interactive. According to White, Roberts and Brannan (2003) “unless the course is reconceptualized using an interactive learning pedagogy, the results are nothing more than a correspondence course via e-mail and that simply transferring a traditional classroom-based course to an online format is doomed to failure” (p. 172). But how do online instructors create highly interactive online classes that engage learners who may feel isolated from, or out of touch with, their instructors when they do not see them regularly? Furthermore, how do instructors generate beneficial instructor-learner interaction, create a good learning environment, increase learner participation, motivate and challenge students, and establish a clear presence in the virtual classroom without dominating the learning community?

## **GAME PLAYING**

Students must be motivated to learn (Calhoun, 1980). Education theory recognizes the value of incorporating games to motivate students to actively participate in the learning process (Azriel, Erthal, & Starr, 2005), stimulate student interest in the educational environment, enhance transfer of knowledge and improve learned retention with meaningful repetition (Chow, Woodford & Maes, 2011). Games improve the purposefulness of studying (Gray, Topping & Carcary, 1998), offer students another learning modality (Sugar, 1994), capture the attention of otherwise inattentive students (Azriel, Erthal & Starr, 2005), and may provide a reason for frequently visiting the course website. These findings suggest that students drawn to the website to play games may linger to actively participate in other posted activities such as discussion board conversations.

## **LINGO BINGO**

Lingo Bingo is a daily game developed for online marketing courses. Its format is identical to bingo. The game has been successfully used in Introductory, Consumer Behavior, and International Marketing courses.

Prior to the beginning of the semester students are emailed game instructions (Appendix 1) and individualized bingo cards (Appendix 2). Every card contains winning BINGO combinations. One question is posted daily, 7 days a week, on the Announcement thread of the course website throughout the 16 week semester. Questions deal with weekly assigned reading topics. A sample question is shown in Appendix 3. Students have 24 hours to correctly answer questions. Student winners are announced on the course website on the day they spell BINGO (See Appendix 4).

Participation in the Lingo Bingo game encourages students to keep up-to-date, visit the course site daily, reduces a sense of isolation, and facilitates learner-instructor dialogue. Vonderwell and Zachariah (2005) indicate that participation is an essential element for active and engaged learning. The daily posting of questions provides an opportunity for the instructor to establish a viable virtual classroom presence in a supportive rather than dominant manner.

The game also requires immediate feedback to students. Research suggests that instructor-learner interaction significantly contributes to learning outcomes (Dennen, Darabi & Smith, 2007) and may be the most important factor affecting how students perceive their learning experience (Marks, Sibley & Arbaugh, 2005). Lingo Bingo enables an online educator to create a positive, supportive, motivating learning climate through both one-on-one and one-to-many interactions. When responding to frequent Lingo Bingo answer submissions the instructor can interact with students one-on-one in a private email conversation thereby reducing feelings of isolation or distance. Posting the names of Lingo Bingo winners, acknowledging student success, and encouraging game participation on the main page of the course website enhances the virtual classroom climate, sets a positive tone to facilitate learning, sustains enthusiasm for the game, and humanizes the asynchronous, anonymous cyber classroom.

## **EVIDENCE OF EFFICACY**

Partitioning students into three categories (bingo winners who are consistently interactive players, non-winners who are inconsistent players, and non-players) confirms the finding of Azriel, Erthal & Starr (2005) that games can increase learning and test scores. Lingo Bingo has been administered in seven online introductory, four consumer behavior, and three international marketing sections with an aggregate enrollment of 428 students. The mean grade of the 257 Lingo Bingo winners is significantly higher (81.3% grade average) than the 101 non-winners who sporadically played the game (75.6% grade average) and the 70 students who never played the game (71.7% grade average). In addition, Lingo Bingo winners are significantly more likely to participate in weekly discussion board activities earlier in the week than other students ( $p = .03$ ), visit the discussion board more frequently during the week ( $p < .01$ ), and engage in threaded discussions with other students ( $p = .04$ ). Anecdotally, student feedback is extremely favorable.

## **CONCLUSION**

Lingo Bingo encourages interactivity and overcomes the psychological and communication gaps created by the transactional distance of online learning. The results of this study suggest that a daily game-playing activity affects student participation and learning outcome. Consistent players of Lingo Bingo earned higher grades in a variety of marketing courses.

## REFERENCES

- Azriel, J. A., M. J. Erthal, & E. Starr (2005). Answers, Questions, and Perceptions: What Is the Role of Games in Business Education? *Journal of Education for Business*, 81 (1) 9-13.
- Berge, Z. L. (1999). Interaction in post-secondary, Web-based learning and teaching. *Educational Technology*, 39 (1) 5-11.
- Bird, L. (2007). The 3 'C' design model for networked collaborative e-learning: a tool for novice designers. *Innovations in Education and Teaching International*, 44 (2) 153-167.
- Bocchi, J., J. K. Eastman, & C. O. Swift (2004). Retaining the online learner: Profile of students in an online MBA program and implications for teaching them. *Journal of Education for Business* 79 (4) 245-53.
- Calhoun, C. (1980). *Managing the learning process in business education*. Belmont, CA: Wadsworth Publishing Company.
- Chow, A. F., K. C. Woodford, & J. Maes (2011). Deal or No Deal: using games to improve student learning, retention and decision-making. *International Journal of Mathematical Education in Science & Technology*, 42 (2) 259-264.
- Chubb, J.E. & T.M. Moe (2012). Higher Education's Online Revolution. Wall Street Journal, Eastern Edition, May 31, A17.
- Chute, A., M. Thompson, & B. Hancock (1999). *McGraw-Hill handbook of distance learning: An implementation guide for trainers and human resource professionals*. New York: McGraw-Hill.
- Dennen, V. P., A. A. Darabi & L. J. Smith (2007). Instructor-Learner Interaction in Online Courses: The relative perceived importance of particular instructor actions on performance and satisfaction. *Distance Education*, 28 (1) 65-79.
- Durrington, V. A., A. Berryhill, & J. Swafford (2006). Strategies for enhancing student interactivity in an online environment. *College Teaching*, 54 (1) 190-193.
- Gray, A., K. Topping, & W. Carcary (1998). Individual and group learning of the Highway Code: Comparing board game and traditional methods. *Educational Research*, 40, 45-53.
- Hara, N., & R. Kling (2000) Students' distress with a Web-based distance education course. *Information, Communication and Society*, 3 (4) 557-579.
- Marks, R. B., S. D. Sibley, & J. B. Arbaugh (2005). A structural equation model of predictors for effective online learning. *Journal of Management Education*, 29 (4) 531-563.
- Northrup, P. T. (2002). Online learners' preferences for interaction. *The Quarterly Review of Distance Education* 3 (2) 219-226.
- Rich, Anne & Mary Dereshiwsky (2011). Assessing The Comparative Effectiveness Of Teaching Undergraduate Intermediate Accounting In The Online Classroom Format. *Journal of College Teaching and Learning*, 8 (9) 19-27.
- Sugar, S. (1994). My first game: The Ms. Bonnie episode. *Simulation & Gaming*, 25, 258-261.
- Vonderwell, Selma & Sajit Zachariah (2005). Factors that Influence Participation In Online Learning. *Journal of Research on Technology in Education*, 38 (2) 213-230.
- White, A., V. Roberts, & J. Brannan (2003). Returning nurses to the workforce: Developing an online refresher course, *Journal of Nursing Education*, 34 (2) 59-64.

## APPENDICES

### Appendix 1: Explanation of Lingo Bingo emailed to students prior the beginning of semester

We all can use some extra credit! And wouldn't it be nice if the extra credit also helps you do better on quizzes! That's the idea behind Lingo Bingo. Before the semester begins I will send every student a Lucky Lingo Bingo card (every student has a different card). Check the Announcements on Blackboard daily. Each day I'll post a numbered Lucky Lingo question. If a posted numbered question matches your Lucky Lingo Bingo Card, email me the correct answer before 9p.m the next day to receive credit. I'll confirm your correct answer then you can check the box off your Lucky Lingo Bingo Card. When you have five correct answers in a row (horizontally, vertically, or diagonally) you'll win 1 bonus point on your final grade in MKT304. You can win as often as you spell "BINGO" in a straight line across, down, or corner-to-corner. Keep playing after you win once because you can win bonus points again and again! As a bonus some Lingo Bingo questions will appear again in Module quizzes.

### Appendix 2: Sample student card (every student received a different number combination)

B	I	N	G	O
2	2	7	10	4
3	23	21	13	5
22	8	10	4	21
18	11	20	5	9
8	1	4	21	20

### Appendix 3: Sample Daily lingo bingo question

Let's begin looking at how to build the right relationships with the right customers. Here's today's Lingo Bingo question. If its number matches your LB card send me the correct answer within 24 hours. I'll confirm that your answer is correct.

**N17:** \_\_\_\_\_ is the process of dividing a market into smaller groups of buyers with distinct needs, characteristics, or behaviors who might require separate products or marketing mixes.

### Appendix 4: Sample Lingo Bingo winner announcements

#### ***BINGO!!!***

Emerson A. became the first Lingo Bingo winner this semester when he spelled B-I-N-G-O diagonally across his lucky card. Keep playing, Emerson. You can win again and again. Glancing over my master sheet I see many students closing in on their own BINGOs. What amazes me is the handful of students who don't play the game. I guess they don't need any extra credit!

#### ***Lingo Bingo Winners***

Three more students have joined the growing list of Lingo Bingo winners. James B., Chandra T., and Kim Y. all took the vertical O route to bonus points. I bet they'll always remember that wholesaling includes all activities in selling goods to those buying for resale or business use!