

## ***Teaching Tip***

# **Using Word Scrambles as an Information Systems Creativity Warm-Up Exercise**

**Steven M. Dunphy**

**Constance C. Milbourne**

School of Business & Economics

Indiana University Northwest

Gary, Indiana 46408, USA

[sdunphy@iun.edu](mailto:sdunphy@iun.edu)

### **ABSTRACT**

A warm-up exercise for the purpose of fostering creativity, imagination and interest is suggested for use in the introductory Management of Information Systems course. Specifically, a series of word scrambles are proposed the solution of which comprises a surprise answer based on a concept in the information systems course textbook. In the first condition students attempt to solve two word scrambles on their own. In the second condition, students solve the exercises using the computer as an aid. Because this is a timed exercise, it is posited that students will report greater ease in solving the second set of word scrambles more quickly and with greater accuracy. The exercise can serve as an example of a computer aided decision support system resulting in greater textbook understanding now and may also prove useful in the development of other possible decision support systems later.

**Keywords:** word puzzles, decision making, creativity enhancement, learning.

### **1. INTRODUCTION**

Proposed herein is a creativity warm-up exercise for use in the introductory information systems courses. The exercise may be useful as an application of Albert Einstein's famous quote about computers. Over sixty years ago, Einstein is quoted as saying, "*Computers are incredibly fast, accurate, and stupid. Human beings are incredibly slow, inaccurate, and brilliant. Together they are powerful beyond imagination*" (Einstein, A., 1950).

The question of how fast, accurate and useful computers are for facilitating and improving decision making is typically discussed and debated in great detail in information systems courses. For example, a detailed discussion of the decision making process is broached in Management Information Systems: Managing the Digital Firm (Laudon & Laudon, 2007). Unfortunately, the fact that rationality is "bounded" and that a 4 or 5 stage decision making model often leaves out intuition, indiscretions and even inspiration is not resolved. For this reason the authors believe that students in a typical, MIS class will not only appreciate an exercise which attempts to fulfill Einstein's vision, but also find it potentially useful as a precursor for extending the process to other applications such as web site development, e-commerce applications and even new, entrepreneurial

ventures. In short it can serve as a 'warm-up' exercise for other information systems projects.

### **2. THE EXERCISE**

Students are assigned the task of unscrambling 4 or 5 words for the purpose of composing the various parts of an important and meaningful phrase in the field of information systems. Appendixes A, B, C, & D are suggested as examples, but the faculty member might wish to ask students to construct their own examples. In any case, this is a timed exercise. Students should note the time started, the time finished and the total time taken to ascertain the surprise solution. If students are able to solve the puzzle without unscrambling the words, that is also acceptable.

Students may wish to visit the website [www.jumble.com](http://www.jumble.com) for inspiration and creativity enhancement should the instructor decide to have his or her students create their own word scrambles. The web site includes "jumble online games," "jumble download games" and even a "comics page" full of surprise endings (solutions). Alternatively, the instructor may wish to use the word scrambles contained in this teaching note.

The word scrambles in appendixes A & B are provided for use in the first condition. In this case, students should

attempt to unscramble the words then solve the puzzle without the use of the computer. Appendixes C & D are provided for the second condition. In this case, students will use the computer as an aid to their decision making by going to any of various unscramble web sites such as [www.unscramble.net](http://www.unscramble.net) or [www.specialist-online-dictionary.com/word-unscrambler.html](http://www.specialist-online-dictionary.com/word-unscrambler.html). By typing in the jumbled word, the computer will unscramble it. Students should then attempt to solve the puzzle.

It is posited that a comparison of the timed results for A & B (condition 1) versus C & D (condition 2) will prove significant even in the statistical sense of the word and useful as a pedagogical exercise. In some cases it may be necessary to note that a scrambled word can be unscrambled in a variety of ways. Still, students should be able to solve the puzzle regardless of the number of word choices. Also, students should be given full credit for solving the word puzzle even without unscrambling every word choice if they are able to skip the preliminary steps and ascertain the correct answer.

As noted above, the authors believe that the computer will greatly facilitate the student's task in terms of solving the individual scrambled words and in terms of then seeing the "big picture" by solving the word puzzle. Further, the number of errors, false starts and side excursions will be minimized by using the computer as a decision aid. The number of errors can be tracked by the students. These errors may be evident by the scratched out attempts to unscramble the words on the sides of the answer sheets. Further, errors or at the least "problems" with solving the scramble will be apparent if it is shown that students took more time to solve puzzles A & B. If students are able to quickly solve the word scrambles, the entire exercise can be completed in one class session. If not, the instructor may want to stretch the exercise over two sessions while also including a "debrief." The authors plan on testing their hypothesis that condition 1 will take more time and prove more difficult than condition 2 in the near future by examining the differences between the two means associated with conditions 1 and 2. A substantial number of undergraduate students will be tested subject to university regulations regarding the human subjects' committee. In light of the current difficulties obtaining human subjects' committee approval, this experiment is suggested for future research.

### 3. DEBRIEF AND CONCLUSION

What does this mean and why should anyone care? If the exercise works as intended, a number of implications may become apparent such as:

- Decision support systems are shown to be especially effective when applied to routine tasks such as unscrambling words or finding the shortest distance between two points.
- The number of errors and time taken to make the decisions is greatly reduced.
- Creativity may be fostered and enhanced.

Various studies already support these implications. Brody, Kowalczyk and Coulter note that "decision aids can eliminate inconsistency in judgments and can ensure that relevant information is included as part of the decision

making process. One result is that predictions derived from ...models outperform unaided human predictions" (2003). In his JISE article on using a decision support system to run a simulated business game, Tal Ben-Zvi found that even a simplified spreadsheet is useful because "...students are forced to make decisions with the available information, thereby helping them tolerate incompleteness of information and ambiguity" (2007). In a recent experiment on using a creativity enhancing decision-making support system, Forgieonne and Newman (2007) found that the creativity enhanced DSS groups significantly outperformed both the control group and the regular decision support system group. In the case of the Forgieonne and Newman study, the creativity enhanced decision support system was provided with "a creativity enhancement tool, Axon Idea Processor. AIP, which is based on the Prolog computer programming language, serves as an electronic sketchpad for visualizing, generating and organizing ideas" (p. 2129). The creativity enhanced group garnered greater profits and outperformed their competitors on a variety of other variables in the Airline simulation.

The word scramble exercise proposed herein can build upon these earlier studies by affording students the opportunity to implement a decision support system, allowing them to evaluate its application purpose and then enabling them to assess its overall effectiveness. An additional benefit is that - unlike simulations - the proposed exercise is free. Additionally, the exercise can be used to foster classroom discussion regarding how Einstein's vision can be realized to gain that "power beyond imagination." From here, further questions can be posed to try to get to there. Are there applications that students can think of which might lead to web development, new decision support systems or even novel and groundbreaking entrepreneurial ventures? Using the word scramble exercise as a creativity warm-up exercise may help students take that all important first step.

### 4. REFERENCES

- Ben-Zvi, Tal. (2007). "Using Business Games in Teaching DSS." *The Journal of Information Systems Education*, V. 18, #1, spring, pages 113-122.
- Brody, R. & Kowalczyk, T. & Coulter, J. (2003). "The effect of a computerized decision aid on the development of knowledge." *The Journal of Business and Psychology*, V. 18, #2, winter, pages 157-174.
- Dean, J. & Sharfman, M. (1996). "Does decision process matter? A study of decision making effectiveness." *Academy of Management Journal*, V. 39 #2.
- Dennis, C. (2007). *Marketing the e-Business*. Taylor & Francis Book Publishers, London.
- Doyle, T.C. (2005). "When you come to a fork... do you lean toward the road more or less traveled?" *Varbusiness*, August, V. 21 # 18, pages 118-120.
- Einstein, A. (1950). The Quotations Page. Quotation #29628, [www.quotationspage.com/quote/29628.html](http://www.quotationspage.com/quote/29628.html).
- Forgieonne, G. and Newman, J. (2007). "An experiment on the effectiveness of creativity enhancing decision-making support systems." *Decision Support Systems*, V. 42, pages 2126-2136.

- Ko, S. & Butler, J. (2007). "Creativity: A key link to entrepreneurial behavior." *Business Horizons*. Sept/Oct. V. 50, #5, page 365.
- Laudon, K. and Laudon, J. (2007). *Management Information Systems: Managing the Digital Firm* (10<sup>th</sup> ed.). Prentice Hall, Inc., Upper Saddle River, New Jersey.
- Proctor, T. (1989). "Experiments with two computer assisted creative problem solving aids." *Omega*. Oxford: 1989. Vol. 17, Iss. 2; p. 197
- Schmitt, B. & Brown, L. (2001). "Build your own garage: blueprints and tools to unleash your company's creativity." New York, New York: Free Press.
- Ward, T. (2004). "Cognition, creativity and entrepreneurship." *Journal of Business Venturing*. Mar 2004. Vol. 19, Iss. 2; p. 173.

#### **AUTHOR BIOGRAPHIES**

**Steven M. Dunphy** received his Ph.D. from Indiana University's Kelley School of Business. He is an Associate Professor of Management at Indiana University Northwest in Gary, Indiana. His research interests include small group development and interpersonal communication.



**Constance Milbourne** received her Ph.D. from The University of Tennessee at Knoxville. She is an Assistant Professor of Marketing at Indiana University Northwest in Gary, Indiana. She has had significant work experience in information systems. Her current research interests include consumer behavior and the effectiveness of advertising in support of food services.



Appendix A

Unscramble these gibberish words to form real words.

**Information Systems Phrase Scramble**

NETHKIC

↑ ↑ — — — — ↑

ARIBD

↑ ↑ ↑ ↑ ↑

SASLC

↑ ↑ — — ↑ ↑

KOSCS

— — — — —  
↑ ↑



*The third pig of yesteryear was a survivor. Today's IS entrepreneur might do even better by combining this with that...*

Now arrange the 15 letters marked with arrows to form the surprise answer.

“ \_\_\_\_\_ ”





Appendix D

Unscramble these  
gibberish words to form  
real words.

**Information Systems Phrase Scramble**

U E R E N V E

↑ ↑ ↑ ↑ ↑ — ↑

S D V O E I

↑ ↑ ↑ ↑ — ↑

G T E N I T N

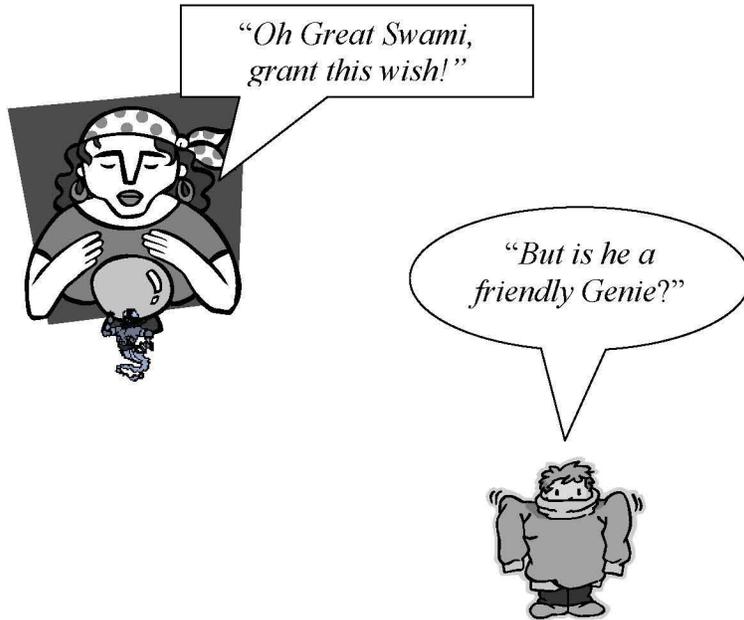
— ↑ ↑ ↑ ↑ ↑ —

S P E E V R R E

— ↑ — ↑ — ↑ — —

R O P N U C I P E

— ↑ ↑ ↑ — ↑ ↑ — —



*Clairvoyants work wonders using E.S.P. What homeowners might use to travel to cyberspace (thereby neglecting both time and place).*

Now arrange the 24 letters marked with arrows to form the surprise answer.

“ \_\_\_\_\_ ”

**Appendix E - Answers:**

Appendix A:

1. kitchen
2. braid or rabid
3. class
4. socks

Surprise: “*Bricks and Clicks*”

Appendix B:

1. dance
2. tryout
3. crock
4. table

Surprise: “*B to C and C to C*”

Appendix C:

1. twine
2. booth
3. mallet
4. mail

Surprise: “*The Bottom Line*”

Appendix D:

1. revenue
2. videos
3. netting
4. preserve
5. porcupine

Surprise: “*Internet Service Providers*” (ISP’s)



### **STATEMENT OF PEER REVIEW INTEGRITY**

All papers published in the Journal of Information Systems Education have undergone rigorous peer review. This includes an initial editor screening and double-blind refereeing by three or more expert referees.

Copyright ©2009 by the Information Systems & Computing Academic Professionals, Inc. (ISCAP). Permission to make digital or hard copies of all or part of this journal for personal or classroom use is granted without fee provided that copies are not made or distributed for profit or commercial use. All copies must bear this notice and full citation. Permission from the Editor is required to post to servers, redistribute to lists, or utilize in a for-profit or commercial use. Permission requests should be sent to the Editor-in-Chief, Journal of Information Systems Education, [editor@jise.org](mailto:editor@jise.org).

ISSN 1055-3096