

**CONCEPTUAL MODEL OF DIGITAL STORYTELLING (DST)**

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## Abstrak

Penceritaan digital (DST) merupakan evolusi kepada penceritaan tradisional, dengan memperkuat lagi kesan penceritaan melalui teknologi terkini. Bagi seseorang pencerita digital untuk menghasilkan sebuah cerita digital, terdapat pelbagai elemen yang perlu diikuti. Walau bagaimanapun, elemen yang dicadangkan oleh berbilang pakar adalah berbeza; ada yang berulang dan ada yang tidak memenuhi keperluan interaktiviti. Oleh itu, matlamat utama kajian ini adalah untuk mengenal pasti persamaan elemen daripada pakar yang berlainan bagi mengelakkan sebarang pertindihan elemen. Dengan berbuat demikian, kajian ini dapat mengenal pasti elemen teras DST dan dipersembahkan dalam bentuk model konseptual. Bagi mencapai matlamat utama kajian ini, empat sub-objektif dibentuk; (1) mengenal pasti elemen teras penceritaan digital yang mewakili DST jenis interaktif dan tidak interaktif, (2) membina satu model konseptual elemen teras DST yang telah dikenalpasti, (3) menilai model konseptual yang dicadangkan oleh pakar DST dan pengguna potensi. Empat fasa metodologi telah disusuli: (1) kerja asas, (2) induksi, (3) lelaran, dan (4) rumusan. Model konseptual telah ditinjau oleh lima pakar antarabangsa dan dinilai oleh 62 pengguna potensi. Penilaian kualiti yang dilakukan terhadap model tersebut merangkumi konstruk: Persepsi Kemudahfahaman, Persepsi Kebergunaan, Kepuasan Pengguna, dan Persepsi Kualiti Semantik. Dapatan penilaian menunjukkan bahawa responden beranggapan model konseptual tersebut berkualiti (skor purata 4.936 daripada skala 7.000). Ujian-T juga menunjukkan tiada perbezaan pendapat yang signifikan antara kumpulan yang berpengalaman membangunkan DST dengan yang tidak berpengalaman. Ini menunjukkan bahawa model konseptual yang terdiri daripada elemen teras DST, iaitu sumbangan utama kajian ini, mampu membimbing pencerita digital dalam membangunkan cerita digital.

**Kata Kunci:** Penceritaan digital, Model Konseptual, Persepsi Kemudahfahaman, Persepsi Kebergunaan, Kepuasan pengguna, Persepsi Kuantiti Semantik

## Abstract

Digital storytelling (DST) is an evolution of the age-old traditional storytelling, by augmenting the power of storytelling via the latest technology. In order for a digital storyteller to construct a digital story, there are sets of guided elements to be followed. However, these experts-proposed elements vary; while some are repetitive others do not cater for interactivity. Therefore, the main aim of this study is to identify the commonality of the diverse elements used by the different experts to eliminate their redundancy. By doing so, this study can identify the DST core elements and present them in the form of a conceptual model. In achieving the main aim, three sub-objectives were constructed; (1) to identify the core elements of digital storytelling that represent interactive and non-interactive forms, (2) to construct a conceptual model of the identified DST core elements, (3) to evaluate the proposed conceptual model by DST experts and potential users. In ensuring that the study is guided and focused, four phases of methodology were followed through: (1) groundwork, (2) induction, (3) iteration, and (4) conclusion. Eventually, the conceptual model was reviewed by five international experts and evaluated by 62 potential users. The evaluation on the quality of the model encompassed the following constructs: Perceived Ease of Understanding, Perceived Usefulness, User Satisfaction, and Perceived Semantic Quality. The findings indicated that the respondents perceived the conceptual model as having quality (mean score of 4.936 over a scale of 7.000). T-Test also revealed that there is no significant difference between the perception of those with experience in developing DST and those without experience. This suggests that the conceptual model consisting of the DST core elements, which is the main contribution of the study, could guide digital storytellers in developing digital story.

**Keywords:** Digital storytelling, Conceptual Model, Perceived Ease of Understanding, Perceived Usefulness, User satisfaction, Perceived Semantic Quality

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## **List of Abbreviations**

CDS	Center for Digital Storytelling
CLT	Cognitive Load Theory
CTML	Cognitive Theory of Multimedia Learning
DST	Digital Storytelling
ITM	Iterative Triangulation Methodology
PEOU	Perceived Ease of Understanding
PSQ	Perceived Semantic Quality
PU	Perceived Usefulness
SMS	Short Message Service
US	User Satisfaction

# CHAPTER ONE

## INTRODUCTION

### 1.1 Background of Study

Story is an important element in human's life. It is learning and teaching tool used to communicate, stir emotions, engage and entertain people to read to the end. According to Dudley (1997), storytelling is the art of storytellers to achieve the aforementioned purposes. Stories are told, heard, and responded to in order to convey and absorb messages or ideas (Grisham, 2006). For generations, stories are utilized as a tool to pass down knowledge and wisdom from parents to children. It started a long time ago informally as pictures on stone walls and has much evolved throughout history (Behmer, 2005).

In this modern day, stories have gone through a major makeover. Moreover, with the intervention of new technology and the appearance of multimedia with its rich media elements such as audio, video, animation, and graphic, stories have diversified from its traditional root without leaving its genuine purpose which is to educate and convey messages. Amalgamated with technology, storytelling has taken a new form with deeper impact in communicating ideas and knowledge sharing. The popular term coined for it is digital storytelling (DST), which has been affected by the technology fast pace evolution (Banaszewski, 2005; Lambert, 2006; Ohler, 2008; Robin, 2008). Long before the birth of technology, traditional storytelling is expressed in its most basic forms, which is oral, or written. However, the introduction of multimedia has changed the perspective of storytelling in a new way. DST combines the art of traditional storytelling with multimedia elements such as

The contents of  
the thesis is for  
internal user  
only

## REFERENCES

- Banaszewski, T. M. (2005). *Digital storytelling: Supporting digital literacy in grades 4-2*. Master of Science in Information Design and Technology Thesis, Georgia Institute of Technology, Atlanta, Georgia.
- Behmer, S. (2005). Digital storytelling: Examining the process with middle school students. Retrieved from <http://ctl.iastate.edu/~ds/Behmer/LitReview.pdf>
- Brinkman, W.-P. (2009). Design of a Questionnaire Instrument. In S. Love (Ed.), *Handbook of Mobile Technology Research Methods* (pp. 31-57): Nova Publisher
- Carroll, J. M. (1998). Reconstructing Minimalism. In J. M. Carroll (Ed.), *Minimalism beyond the Nurnberg funnel*. Cambridge: The MIT Press.
- Cavana, R. Y., Delahaye, B. L., & Sekaran, U. (2001). *Applied business research: Qualitative and quantitative methods*. NY: Wiley.
- Center for Digital Storytelling. (n.d.) Retrieved July 21, 2009, from <http://www.storycenter.org/>
- Collins, R., & Cooper, P. J. (1997). *The power of story: Teaching through storytelling* (2nd ed.). IL: Waveland Press.
- Culatta, R. (2012). Minimalism (J. Carroll) Retrieved 24 March, 2012, from <http://www.instructionaldesign.org/theories/minimalism.html>
- DeMaio, T. J., Rothgeb, J., & Hess, J. (1998). *Improving survey quality through pretesting*. Paper presented at the Proceedings of the Survey Research Methods Section, American Statistical Association.
- Dudley, B. (1997). What is storytelling Retrieved 21 July 2008, from <http://www.australianstorytelling.org.au/txt/d-what2.php>
- Figg, C., & Burson, J. (2010). *Chapter Six: Multimedia and DGI: more Project Creation*. Raleigh, NC: Lulu Enterprises, Inc.
- Figl, K., Mendling, J., & Strembeck, M. (2009). *Towards a Usability Assessment of Process Modeling Languages*. Paper presented at the Proc. of the 8th Workshop Geschäftsprozessmanagement mit Ereignisgesteuerten Prozessketten (EPK 2009). CEUR Workshop Proceedings Berlin, Germany.
- Frazel, M. (2010). *Digital storytelling guide for educators*. Washington, DC: ISTE.
- Fu, L., Salvendy, G., & Turley, L. (2002). Effectiveness of user testing and heuristic evaluation as a function of performance classification. *Behaviour & Information Technology*, 21(2), 137-143.

- Gartstein, M., Shiang, J., & Bogumill, S. (2000). Psychometric properties of a scale to measure adaptation for immigrant populations: The Cultural Beliefs, Behaviors and Adaptation Profile. Retrieved from [www.anvin.org/~suzi/questionnaires/CBBAP\\_psychometrics.pdf](http://www.anvin.org/~suzi/questionnaires/CBBAP_psychometrics.pdf)
- George, D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update* (4th ed.). Boston: Allyn & Bacon.
- Gliem, J. A., & Gliem, R. R. (2003). *Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales*. Paper presented at the Midwest Research to Practice Conference in Adult, Continuing, and Community Education, Columbus, OH.
- Grisham, T. (2006). Metaphor, poetry, storytelling and cross-cultural leadership. [Research paper]. *Management Decision*, 44(4), 486-503.
- Hamill, J. S. (2010). *Your Family, Your Story: A Guide to Digital Storytelling*. Lexington, KY: Createspace.
- Hough, D., & Bryde, S. (1996). *The effects of full-day kindergarten on student achievement and affect*. Paper presented at the American Educational Research Association Annual Meeting, New York.
- Kalyuga, S. (2010). Schema acquisition and source of cognitive load. In J. L. Plass, R. Moreno & R. Brünken (Eds.), *Cognitive Load Theory* (pp. 48-64). NY: Cambridge University Press.
- Korhonen, H., Paavilainen, J., & Saarenpää, H. (2009). *Expert review method in game evaluations: comparison of two playability heuristic sets*. Paper presented at the Proceedings of the 13th International MindTrek Conference.
- Krosnick, J. A. (1999). Maximizing questionnaire quality. In J. P. Robinson, P. R. Shaver & L. S. Wrightsman (Eds.), *Measures of political attitudes* (Vol. 2, pp. 37-58). New York: Academic Press.
- Lambert, J. (2006). *Digital storytelling: Capturing lives, creating community* (2nd ed.). Berkeley, CA: Digital Diner Press.
- Lewis, M. W. (1998). Iterative triangulation: a theory development process using existing case studies. *Journal of Operations Management*, 16(4), 455-469.
- Lowenthal, P. (2009). Digital storytelling in education: An emerging institutional technology. In J. Hartley & K. McWilliam (Eds.), *Story circle: Digital storytelling around the world* (First ed., pp. 252-259). West Sussex: Wiley-Blackwell.
- Luthans, F., Norman, S. M., Avolio, B. J., & Avey, J. B. (2008). The mediating role of psychological capital in the supportive organizational climate—employee

- performance relationship. *Journal of Organizational Behavior*, 29(2), 219-238.
- Maes, A., & Poels, G. (2006). *Evaluating quality of conceptual models based on user perceptions*. Paper presented at the Conceptual Modeling-ER 2006.
- Maes, A., & Poels, G. (2007). Evaluating quality of conceptual modelling scripts based on user perceptions. *Data & Knowledge Engineering*, 63(3), 701-724.
- Mateas, M. (2000). A neo-aristotelian theory of interactive drama. *Working notes of the AI and Interactive Entertainment Symposium, AAAI Spring Symposium Series*. Menlo Park, CA: AAAI Press.
- Mateas, M. (2002). *Interactive Drama, Art and Artificial Intelligence*. University of California.
- Mayer, R. E. (2005a). *The Cambridge handbook of multimedia learning*: New York: Cambridge University.
- Mayer, R. E. (2005b). Cognitive theory of multimedia learning. *The Cambridge handbook of multimedia learning* (pp. 31–48). New York: Cambridge University.
- Mayer, R. E. (2005c). Principles of multimedia learning based on social cues: personalization, voice and image principles. *The Cambridge handbook of multimedia learning* (pp. 31–48). New York: Cambridge University.
- Mayer, R. E., Fennell, S., Farmer, L., & Campbell, J. (2004). A personalization effect in multimedia learning: Students learn better when words are in conversational style rather than formal style. *Journal of Educational Psychology*, 96(2), 389-395.
- McWilliams, B. (1997). What is Storytelling? Retrieved 27 Nov 2010, from [http://www.eldrbarry.net/roos/st\\_defn.htm](http://www.eldrbarry.net/roos/st_defn.htm)
- Miller, C. H. (2008). *Digital storytelling: a creator's guide to interactive entertainment (2nd Ed.)* Burlington, MA: Focal Press.
- Miller, L. C. (2010). *Make Me a Story: Teaching Writing Through Digital Storytelling*. Portland, Maine: Stenhouse Pub.
- Molich, R., & Jeffries, R. (2003). *Comparative expert reviews*. Paper presented at the CHI 2003, Extended Abstracts.
- Moody, D. L. (2005). Theoretical and practical issues in evaluating the quality of conceptual models: current state and future directions. *Data & Knowledge Engineering*, 55(3), 243-276.

- Moreno, R., & Park, B. (2010). Cognitive Load Theory : History Development and Relation to Other Theories. In J. L. Plass, R. Moreno & R. Brünken (Eds.), *Cognitive Load Theory* (pp. 9-28). NY: Cambridge University Press.
- Nielsen, J. (2003). How to conduct a heuristic evaluation. Retrieved 5 May 2011, from [http://www.useit.com/papers/heuristic/heuristic\\_evaluation.html](http://www.useit.com/papers/heuristic/heuristic_evaluation.html)
- Nielsen, J., & Molich, R. (1990). *Heuristic evaluation of user interfaces*. Paper presented at the SIGCHI conference on Human factors in computing systems: Empowering people, Seattle, Washington, United States.
- Ogle, G. J. (2002). *Towards a formative evaluation tool*. Virginia Polytechnic Institute and State University.
- Ohler, J. (2008). *Digital storytelling in the classroom: New media pathways to literacy, learning, and creativity*. Thousand Oaks, CA: Corwin Press.
- Olson, K. (2010). An Examination of Questionnaire Evaluation by Expert Reviewers. *Field Methods*, 22(4), 295.
- Paul, N. (2004). The future of storytelling in the digital age : Strategic thinking for online journalism. Retrieved from [http://www.kbi.re.kr/multi/download.jsp?ftbname=TBL\\_SEMINA&fseq=505&fcode?3031](http://www.kbi.re.kr/multi/download.jsp?ftbname=TBL_SEMINA&fseq=505&fcode?3031)
- Paul, N., & Fiebich, C. (2005). The elements of digital storytelling. Retrieved June 28, 2008, from <http://www.inms.umn.edu/elements/>
- Pellowski, A. (1977). *The world of storytelling*. NY: R.R. Bowker.
- Pierotti, K. (2006). *Digital storytelling : An application of vichian theory*. Brigham Young University. Retrieved from <http://patriot.lib.byu.edu/ETD/image/etd1262.pdf>
- Plass, J. L., Moreno, R., & Brünken, R. (Eds.). (2010). *Cognitive Load Theory*. NY: Cambridge University Press.
- Porter, B. (2004). *Digitales: The art of telling digital stories*. Sedalia, CO: bjpconsulting.
- Robin, B. (2006). *The Educational Uses of Digital Storytelling*. Paper presented at the Society for Information Technology & Teacher Education International Conference 2006, Orlando, Florida, USA.
- Robin, B. (2008). The seven elements of storytelling. Retrieved 14 October 2008, from <http://digitalstorytelling.coe.uh.edu/7elements.html>
- Robson, C. (2011). *Real world research: a resource for users of social research methods in applied settings* (3rd ed.). Chichester, West Sussex: Wiley.

- Rothgeb, J., Willis, G., & Forsyth, B. (2007). Questionnaire Pretesting Methods: Do Different Techniques and Different Organizations Produce Similar Results? *Bulletin of Sociological Methodology*, 96(1), 5-31.
- Salpeter, J. (2005). Telling tales with technology. Retrieved from <http://www.techlearning.com/story/showArticle.php?articleID=60300276>
- Schafer, L. (2004). *Models for Digital Storytelling and Interactive Narratives*. [http://www.cosignconference.org/downloads/papers/schafer\\_cosign\\_2004.pdf](http://www.cosignconference.org/downloads/papers/schafer_cosign_2004.pdf)
- Schafer, L. (2008). *Investigations on digital storytelling: The development of a reference model*. Saarbrücken, Germany: VDM Verlag.
- Simmons, A. (2006). *The story factor: Inspiration, influence, and persuasion through the art of storytelling*. NY: Perseus Books Group.
- Sturm, B. (2000). The "Storylistening" Trance Experience. *The Journal of American Folklore*, 113(449), 287-304.
- Sweller, J. (2010). Cognitive Load Theory : Recent Theoretical Advances. In J. L. Plass, R. Moreno & R. Brünken (Eds.), *Cognitive Load Theory* (pp. 29-47). NY: Cambridge University Press.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, 53-55.
- Tomaszewski, Z., & Binsted, K. (2006). A reconstructed neo-aristotelian theory of interactive drama. *Computational Aesthetics: Artificial Intelligence Approaches to Beauty and Happiness: Papers from the 2006 AAAI Workshop*. (pp. 103-106. ). Menlo Park, CA: AAAI Press.
- Wheeler, L. K. (2004). Freytag's Pyramid Chart. Retrieved June 03, 2010, from <http://web.cn.edu/kwheeler/freytag.html>
- Wise, C. M. (1962). The Structure of Classic Tragedy. *Academic Annual*, 4, 39-46. Retrieved from <http://sunzi1.lib.hku.hk/hkjo/view/34/3400057.pdf>
- Zikmund, W. G. (2003). *Business Research Methods* (7th ed.). Ohio: Thompson.