

DEVELOPING AN INTERACTIVE MULTIMEDIA APPLICATION FOR E-
LEARNING JAPANESE LANGUAGE

A Project Paper submitted to the Graduate School in partial fulfillment
of the requirements for the degree of
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ABSTRACT (BAHASA MALAYSIA)

Projek ini dihasilkan untuk membangunkan satu perisian aplikasi multimedia interaktif untuk mewujudkan pembelajaran secara elektronik bagi pembelajaran bahasa Jepun. Aplikasi ini bertujuan menyumbangkan terhadap pembangunan aplikasi pendidikan di Malaysia. Aplikasi ini dapat menawarkan pembelajaran bahasa Jepun yang menarik, mudah belajar dan efektif dengan penggunaan teknologi komputer dan multimedia yang canggih. Aplikasi ini dapat menyediakan pembelajaran berbantukan komputer bagi kursus bahasa Jepun dan menyediakan suasana belajar mengikut kehendak dan kemampuan dalam pembelajaran bahasa Jepun. Kertas projek ini memberi penumpuan daripada penghasian konsep pembangunan aplikasi sehingga terhasilnya versi prototaip aplikasi. Kekurangan aplikasi ini juga dibincangkan. Selain itu, pembangunan dan kajian selanjutnya juga dicadangkan agar memperbaiki atau menghasilkan aplikasi yang lebih baik pada masa depan.

ABSTRACT (ENGLISH)

This project is developed to present an interactive multimedia application for providing electronic learning (e learning) in Japanese language. The application aimed to contribute to the growth of educational application development in Malaysia. It provides fun, easy and effective approach in learning Japanese by integrating current sophisticated computer and multimedia technologies. It uses as computer-based instruction (CBI) to enhance the Japanese classes and provide self-paced environment in learning Japanese language. The paper focused on the project application from concept to produce the prototype version of the application. Limitations of the developed application are discussed as well. The future research and development of the project are suggested to take consideration in order to improve or to produce a better version in the future.

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CHAPTER ONE:

INTRODUCTION

The project is initiated to develop an interactive multimedia application for providing electronic learning (e-learning) in Japanese language. This chapter will cover background of interactive multimedia application in education, problems faced by the traditional classroom instruction method and the objective of the project. It will also cover the requirement, scope and significance of the project.

1.1 Background

After the Multimedia Super Corridor (MSC) was launch in 1996, multimedia has become a “*buzzword*” that using by many people in Malaysia. According to Gehris (1998), *multi* means more than one, and *media* means a form of communication. Generally, multimedia can be refer to any computer-based application or presentation software that integrates at least two or more of the elements like text,

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BIBLIOGRAPHY

Akyalcin, J. (1996). How can use of Multimedia enhance the Teaching of science? [Online] Available: <http://210.251.161.181/fileteam/>

Azarsma, R. (1996). Multimedia Interactive Video Production. IPT An International of Wadsworth Publishing Company

Ayersman (1999). Creating Web Based Instructional Hypermedia Projects

Ballenger, Bruce (1999). The Curious Research, 2 edition, A Guide To Writing Research Paper. Allyn & Bacon.

Bacon, J et al (1999). Director 7 and Lingo Bible. IDG Books Worldwide, Inc.

Bosco, J. (1986). An analysis of Evaluations of Interactive Video. Educational Technology, 25, 7-16

Brian W. et al (2000), elearning—The Engine of the knowledge Economy. Morgan Keegan & Cor Inc.

California Economic Strategy Panel, San Francisco Bay Area Regional Forum. The Multimedia Industry cluster in the Bay Area [Online] Available: www.economicstrategy.ca.gov/california_economy_new_economy/industry/1.html

Dunaway (1994). Distributed Multimedia Requirement. The McGraw-Hill Multimedia Handbook

Fletcher, D. (1989). The effectiveness and cost of interactive videodisc instruction. *Machine-Mediated Learning*, 3, 361-385.

Fletcher, D. (1990). The effectiveness and cost of interactive videodisc instruction in defense training and education (IDA Paper P-2372). Alexandria, VA: Institute for Defense Analyses.

Gehris, D. (1998). Using Multimedia Tools and Applications on the Internet. IPT An International of Wadsworth Publishing Company

Georganas, N. (1997) Multimedia Applications Development: Experiences. *Multimedia Tools and Applications* 4, 313-332 (1997)

Iskander et. al (1998). Interactive Multimedia Lessons for Education. *Instructional Technology*

Jones, D. (2000), Myths of Web-based Education, [Online] Available: webclass.spu.edu.nu/Why/Myths/The_Paper/

Korolmko, M (1997). Writing for Multimedia, A Guide and Sourcebook for the Digital Writer. ITP An International Thomson Publishing Company.

Kulik, J. A., Kulik, C. C., & Cohen, P. A. (1980). Effectiveness of computer-based college teaching: A meta-analysis of findings. *Review of Educational Research*, 50, 525-544.

Kulik, C. C., Kulik, J. A., & Shwalb, B. J. (1986). The effectiveness of computer-based adult education: A meta-analysis. *Journal of Educational Computing Research*, 2, 235-252

Kulik, J. A., Bangert, R. L., & Williams, G. W. (1983). Effects of computer-based teaching on secondary school students. *Journal of Educational Psychology*, 75, 19-26.

Kulik, J. and C. Kulik. (1987). Computer-Based Instruction: What 200 Evaluations Say. Paper presented at the Annual Convention of the Association for Educational Communications and Technology (Atlanta, GA, February 26-March 1).

Najjar, L.J. (1996). Multimeida Information and Learning. *Journal of Educational multimedia and hypermedia*, 5, 129-150.

Najjar (1992). Multimedia User Interface Design Guidelines. (IBM TR 52.0046) Alanta, GA IBM Corporation

Najjar, L. J. (1998). Principles of educational multimedia user interface design. *Human Factors*, 40(2), 311-323.

Nielsen, J. (1995). Multimedia & hypertexts: The Internet and beyond. Boston, MA: Academic Press.

Shah, V. and Musser, J. (1996), Lingo and Shockware Sourbook. Wiley Computer Publishing

Shuman, James (1997). Multimedia in Action. ITP An International Thomson Publishing Company.

Small, Peter (1999). Lingo Sorcery, 2nd Edition. John Wiley & Sons LTD.

Stephert, John (1998). Authoring Authorware, A practical Guide, Prentice Hall.

Strauss, Roy (1997). Managing Multimedia Projects. Focal Press- Butterworth –Heinemann.

Thompson, John (1996). Marcomedia Director Lingo Workshop for Windows, Hayden Books.

Verano, M. (1987). Achievement and retention of Spanish presented via videodisc in linear, segmented and interactive modes. Unpublished doctoral dissertation, University of Texas, Ausin, TX.

Vincent and Hah (1996). Strategies employed by users of Japanese computer assisted language learning (CALL) program. Australian Journal of Educational Technology 1996, 12(91), 25-34

Yahya Noor Izzah (1997). The preparation of teaching Multimedia Courses on the WWW at UUM Northern university of Malaysia UUM.