Chapter 12
Conclusion and Further Work

CONCLUSION

Mechanical engineering course subjects such as Mechanics Dynamics, combine a mix use of mathematics, schematic diagrams, and text descriptions. Frequently, students are unclear of basic principles of Engineering Mechanics Dynamics, and as such they do not know which mathematical relationships are to be applied in solving a particular problem. Additionally, as the name "dynamics" implies, the very nature of this subject is not "static" and thus requires learners to visualize motion; for example, in a given time period, a particle may be moving in a straight line and after some seconds the particle may experience a curvilinear motion. If the learner fails to see this, the learner will not be able to employ the right equations to solve the problem.

As such, an effort was made to evaluate the feasibility and effectiveness of employing technologies such as multimedia and desktop virtual reality to enhance the problem solving skills and learning of students.

In this book, the development of computer-aided learning software termed as technology assisted problem solving (TAPS) packages is demonstrated in Chapter 7. The book provided an overview of developing TAPS packages using multi design approaches. The work is one of the pioneering efforts to

DOI: 10.4018/978-1-60566-764-5.ch012

Copyright © 2010, IGI Global. Copying or distributing in print or electronic forms without written permission of IGI Global is prohibited.

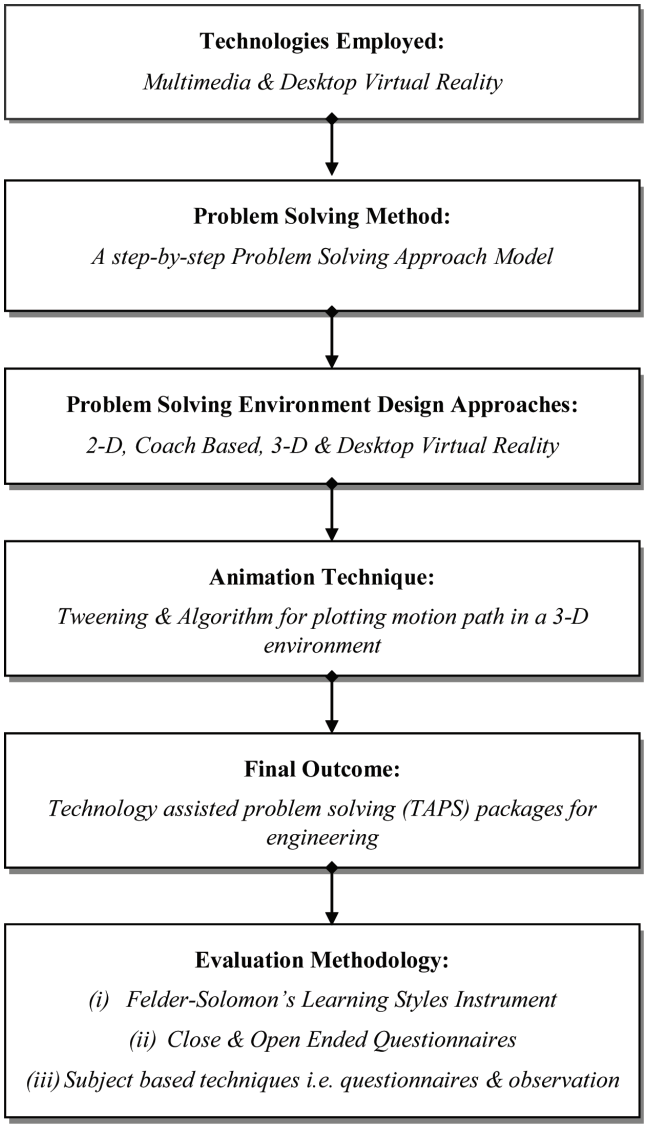
address the need for computer based problem solving software packages for the domain of engineering. The development processes of TAPS packages are shown in (Figure 1).

More specifically, the conclusions of the study are as follows.

Technologies

The use of multimedia and desktop virtual reality in the development of TAPS packages has helped to address the potential benefits of employing technologies which provide a combination of multimedia and dynamic illustrations in engineering problem solving tasks. The ability of mixing different formats of media for the development of TAPS packages has greatly enhanced the ability to convey engineering concepts and descriptions in a better and simple manner (as stated in Chapter 6). The TAPS packages

Figure 1. Development processes of TAPS packages



6 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/conclusion-further-work/37891

Related Content

Collaborative Development and Utilization of iLabs in East Africa
Cosmas Mwikirize, Arthur Asiimwe Tumusiime, Paul Isaac Musasizi, Sandy Stevens Tickodri-Togboa, Adnaan Jiwaji, Josiah Nombo, Baraka Maiseli, Teyana Sapulaand Alfred Mwambela (2012). *Internet Accessible Remote Laboratories: Scalable E-Learning Tools for Engineering and Science Disciplines (pp. 108-122).*
www.irma-international.org/chapter/collaborative-development-utilization-ilabs-east/61454

Learning Software Industry Practices with Open Source and Free Software Tools
Jagadeesh Nandigamand Venkat N. Gudivada (2014). *Overcoming Challenges in Software Engineering Education: Delivering Non-Technical Knowledge and Skills (pp. 414-430).*
www.irma-international.org/chapter/learning-software-industry-practices-with-open-source-and-free-software-tools/102344

Virtual Practices, Virtual Laboratories, and Virtual Internship Experience in Engineering Training
Konstantin Pavlovich Alekseev, Gerard L. Hanley, Nurlan Muratovich Kiyasovand Valeriy Nikolaevich Platonov (2019). *Handbook of Research on Engineering Education in a Global Context (pp. 390-403).*
www.irma-international.org/chapter/virtual-practices-virtual-laboratories-and-virtual-internship-experience-in-engineering-training/210337

Project-Based Learning Application in Higher Education: Student Experiences and Perspectives
João Eduardo Teixeira Marinho, Inês Rafaela Martins Freitas, Isabelle Batista dos Santos Leão, Leonor Oliveira Carvalho Sousa Pacheco, Margarida Pires Gonçalves, Maria João Carvalho Castro, Pedro Duarte Marinho Silvaand Rafael José Sousa Moreira (2022). *Training Engineering Students for Modern Technological Advancement (pp. 146-164).*
www.irma-international.org/chapter/project-based-learning-application-in-higher-education/293563

On the Use of Virtual Environments in Engineering Education
D. Vergara, M. Lorenzoand M.P. Rubio (2016). *International Journal of Quality Assurance in Engineering and Technology Education (pp. 30-41).*
www.irma-international.org/article/on-the-use-of-virtual-environments-in-engineering-education/168590