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THE 14TH INTERNATIONAL INVENTION, INNOVATION & DESIGN COMPETITION 2025

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I-NPD APP: A TECH-DRIVEN AND GREEN INNOVATION FOR CREATIVE LEARNING IN MARKETING

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ABSTRACT

This study explores the use of an innovative digital tool—the i-NPD App—to enhance learning in New Product Development (NPD), a key Marketing subtopic often challenging for students. Built with Power Apps, the i-NPD App provides interactive, structured guidance on the 8-step NPD process while promoting sustainability by reducing paper use. Tested with 20 Marketing students, post-surveys results showed unanimous agreement that the app improves understanding, presentation, and application of NPD. Some users noted a cluttered interface, prompting the development of a detailed instruction manual to enhance usability and learning outcomes.

Keywords: New Product Development; i-NPD App; innovation; student-centered; 21st century learning.

1. INTRODUCTION

The topic of New Product Development (NPD) is a critical component of the marketing curriculum, as it provides students with essential knowledge of the systematic steps involved in creating new products. However, it has been observed that the use of creative presentation slides and engaging classroom activities alone does not guarantee students' comprehension of the theoretical concepts, nor their ability to accurately apply the eight-step NPD process in their project work. In practice, many students tend to overlook crucial stages of the process, often resulting in incomplete or substandard project submissions.

Assessment findings further indicate a noticeable decline in students' listening skills and sustained attention during lectures. Consequently, key elements of the NPD framework are frequently absent from their projects, leading to lower performance outcomes. Additionally, feedback gathered from course evaluations highlights student concerns regarding the perceived complexity of the NPD steps and the length of the lectures. Many students reported feeling disengaged and overwhelmed, expressing doubts about their capability to complete the projects successfully.

2. METHODOLOGY

This study focuses on Diploma in Marketing students at Kolej Profesional MARA Seri Iskandar, Perak, Malaysia. The researchers, both experienced marketing lecturers with over 18 years of teaching experience, identified the need to enhance student understanding and application of the New Product Development (NPD) process. This led to the development of the i-NPD App, a digital version of the original tool that retains its engaging and interactive features while offering a more eco-friendly, cost-effective, and accessible format. The app aims to enhance the learning experience while promoting green innovation in educational practices.
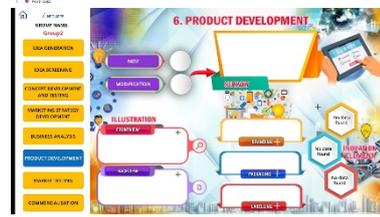
2.1 Objectives

1. To examine students' attitudes toward incorporating digital apps in their learning routines
2. To assess students' perceptions of how educational technology tools influence their classroom engagement and motivation.
3. To collect student suggestions for improving the use and functionality of the i-NPD app in future learning sessions.

2.2 Population and sample

The population for this study comprises Diploma in Marketing students from Semester 2, Semester 3, and Semester 4 at Kolej Profesional MARA Seri Iskandar. These students have been exposed to the New Product Development topic and have had access to the i-NPD app during their coursework.

A total of 20 students were selected as the sample for this study. These participants were drawn from Semester 2, 3, and 4 of the Diploma in Marketing programme. They were selected using purposive sampling, focusing on students who have used or interacted with the i-NPD app as part of their learning experience.

2.3 The Innovation

Step 1: Idea Generation	Step 2: Idea Screening
Step 3: Concept Development & Testing	Step 4: Marketing Strategy Development
Step 5: Business Analysis	Step 6: Product Development

| Step 7: Market Testing | Step 8: Commercialisation |

Diagram 1 The i-NPD App

3. FINDINGS

There are 20 students who participated in this survey. Their ages range between 18 – 25 years old, and all of them are currently undertaking Diploma in Marketing program at KPMSI.

3.1 Student's perception on using innovative/technological tools/app in teaching and learning

The survey explored respondents' perceptions of using apps and other technological tools in teaching and learning. Overall, respondents agreed that such tools enhance the learning process, making it easier and more enjoyable. They also expressed that apps contribute to a more engaging, fun, and creative learning experience, and supported the view that innovative elements should be incorporated into all lectures. However, respondents also acknowledged that mastering these innovative tools can be challenging. Additionally, responses were generally neutral regarding statements suggesting that traditional teaching methods are superior or that technology-driven approaches diminish their interest in learning.

3.2 The effectiveness of i-NPD app as a digital tool in learning

The second part of the survey focused on the overall effectiveness of the i-NPD App as a digital tool for learning the topic of product development. The results indicate that respondents generally found the app to be useful, user-friendly, and effective in facilitating quick understanding of the new product development process. Respondents also agreed that the i-NPD App enhances comprehension, makes learning more engaging and interactive, and presents content in a relevant and comprehensive manner.

4. CONCLUSION

The implementation of the i-NPD app as a digital learning tool has provided valuable insights into students' acceptance of technology-driven education. Throughout this research, it became evident that students are increasingly receptive to the use of innovative applications, especially when the tool is user-friendly and visually engaging. This action research also strengthened the belief that digital learning can complement traditional instruction by improving student engagement, comprehension, and creativity. Particularly in complex topics like New Product Development. While acknowledging the various benefits and functionalities of the i-NPD App, respondents recommended that it be accompanied by clear instructions or guidelines to ensure ease of use and a stress-free experience. Some also suggested providing an instructional video to demonstrate how to use the app effectively.
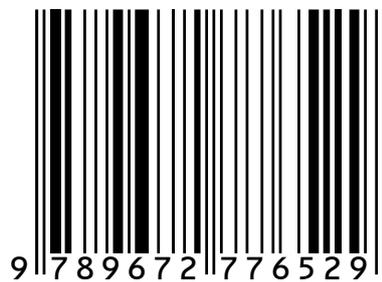
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