

*Creating Design Guideline; Online Platform to Encourage Lifelong Learning Among Thai Digital Natives*

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**Abstract**

A National Scheme of Thailand Education for 2017-2039 according to the Office of the Education Council of Thailand, provides a framework to follow in the development of education. One of the important considerations is to support lifelong learning for Thais with high quality and standardization of education at all levels. One of the challenges for the educational problem in Thailand in the 21st century is how to encourage Thai digital natives (14-25-year-old) to utilize technology for self-access, out-of-class learning style. Therefore, the purpose of this study is to identify an appropriate design guideline for an online platform that promotes lifelong learning among Thai digital natives. The study methodology covers the analysis of literature reviews including best practices in design and related fields and responses from the distributed questionnaire surveys, which leads to the creation of an appropriate design guideline for an online platform. As a result, the guideline addresses four important elements; 1) Responsive design, 2) Multiple Social Media, 3) Infographic and/or Infotainment, and 4) Modern and/or Up-to-Date Design. The identified design guideline can be applied creatively by designers and/or educators in a varied outside-classroom online learning resources, such as, online museums, art galleries, local communities, and other areas with different learning environments. Moreover, the design guideline is considered to enhance lifelong learning that motivates achievement in learning experiences among Thai digital natives.

Keywords: Thai Digital Natives, Online Platform, Responsive Website, Lifelong Learning, Visual Communication Design

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## **Introduction**

The transformation of societies, economies, and technology environment in the world has become a critical challenge for people. The educational system should support and respond to develop skills throughout life. Continual learning could help people to adapt skills to any changes in society and improve their quality of life. Both Formal and nonformal learning styles focus on the objectives of learning and delivering contents to boost capability.

From this concern, a key to the learning journey to integrate effective development is to encourage a lifelong learning mindset. Lifelong learning engages in learning outside the formal system and creates a learning experience constantly for sustainable development.

A National Scheme of Thailand Education for 2017-2039, according to the Office of the Education Council of Thailand, considers the quality of national education as the focus mechanism for national economic and social development. The lifelong learning strategy aims to improve the learning experience and use the benefits of digital technology for all ages to access educational resources.

Younger generations engage in the development and response to the progress of the country's future. The new generation spends most of their time in a digital lifestyle and becomes digital natives. Digital natives are fluent in digital technology, to utilize digital content for self-access learning resources through online platforms. As the importance of the study, a lifelong learning behavior for digital natives could expand creativity, innovation, and imagination to contribute improvement of better lives and the development of society.

In Thailand, the Ministry of Education, educational institutions, and other public educational services support a lifelong learning concept to encourage Thai digital natives through online platforms such as websites, social media, and multimedia platforms. However, many self-access learning services have encountered low engagement in reaching their proficient knowledge. In the research analysis, the issue could be the lacking of connection between a formal educational system and outside classroom learning resources. Another significant factor is unfocused on creating attractive media, concerned with content development, an exciting communication method, and a modern design of multimedia for Thai digital natives appropriately.

The research gathering information recently reflected that many public educational services in Thailand are accelerating development to provide an engaging online platform. Most of them provide social networking media, official websites, or active online platforms. Nevertheless, the engagement of Thai digital natives remains below expectations.

In addition, the researcher desired to create an attractive platform prototype to enhance lifelong learning for Thai digital natives and provided a result of the focus group interview at the end of this study.

## **Research Objectives**

1. To identify a design guideline focusing on the identified elements to encourage lifelong learning among Thai digital natives
2. To create a prototype of an online platform for educational providers or knowledge services units to achieve a professional communication design on their platforms

## Methodology

The research used mixed-method quantitative and qualitative research and divided it into two processes.

Process one is to collect the survey result from the Thai digital native population in Thailand. There are 12,137,820 Thai digital natives aged 14 to 25 in Thailand (National Statistical Office of Thailand, 2021). The research study uses the formula of Taro Yamane with a 95% of confidence level to calculate a reliable sample size determination of a representative population (Yamane, 1967). The numbers of the sample are at least 399 Thai digital native responses. The survey obtained 433 Thai digital native responses from six regions of Thailand and chose a voluntary sampling technique. This process focused on three parts. Part one is to collect general demographic information of respondents. Part two is to certify the number of respondents who use digital tools and understand their media lifestyle. In the final part, the survey considers how they prefer beneficial informal learning styles as a basis of everyday lifestyle.

Process two is to analyze research papers and best practices in communication design for a suitable platform in a related field of educational content appealing to digital natives. This process aims to review and analyze the research papers and the best practices in the design elements on an appropriate platform and see how to bridge the knowledge services of the educational provider to Thai digital natives. The finding could be considered a design guideline to apply for the study.

### Survey Data Analysis Process

The survey questionnaire consists of three parts. Part one, the questions were general demographic information. Part two collected a behavior/experience using technology for their media lifestyle. Part three, the questions focused on an interest in using self-access learning resources outside the classroom of Thai digital natives.

### Part 1: General Demographic Information

Variables	Values	Numbers	Percent
Gender	Male	154	35.6
	Female	273	63
	Not Specified	6	1.4
Age	14 – 17	40	9.3
	18 – 21	137	58.9
	22 – 25	254	31.8
Region	Central	178	41.1
	Eastern	8	1.8
	Northeastern	92	21.2
	Northern	64	14.8
	Western	3	0.8
	Southern	88	20.3

Table 1: The Table Shows General Demographic Information of 433 Respondents

## Part 2: Behavior/Experience Using Technology and Media Lifestyle

Behavior/Experience Using Technology	Values	Numbers	Percent
Experience Using Computer/ Online media/ Social media and/or Browsing Websites and Mobile/ Tablet Applications	< 1 Year	3	0.7
	1 – 3 Years	19	4.4
	4 – 6 Years	71	16.4
	7 – 9 Years	156	36.1
	> 10 Years	183	42.4
Daily Time Spent for Using Computer/ Online Media	< 1 hr.	4	0.9
	1 – 2 hrs.	20	4.6
	3 – 4 hrs.	83	19.2
	5 – 6 hrs.	125	28.9
	7 – 8 hrs.	83	19.2
	> 8 hrs.	118	27.3
Multiple Response Question	Multiple-Selection	Numbers	Percent
Electronic Device Connecting the Internet/ Online Media for Regularly	Smartphone	410	97.7
	Tablet	77	17.8
	Notebook Computer	147	33.9
	Desktop Computer	69	15.9
	Smart TV	35	8.1

Table 2: The Table Shows Behavior/Experience Using Technology and Media Lifestyle of Respondents

The responses showed that 433 Thai digital natives have their own online devices of 99.5%, and 46.5% spend more than 7 hours per day expose to digital online content. The replies of 42.4% of 183 respondents have had an online experience for more than ten years on several platforms, such as social media, websites, online games, and applications. The significant responses indicated that Thai digital natives acquaint with an online lifestyle and connect to digital content frequently.

## Part 3: The Interest in Using self-Access Learning Resources Outside-Classroom

This part of the question provides a five-point Likert scale using a method of summated rating, ranging from ‘Strongly agree’ (5) to ‘Strongly disagree’ (1) to interpretation and analyze the data (Likert, 1932).

Beneficial of Using Outside-Classroom Learning Resources	Mean	S.D.
To improve a better learning atmosphere.	4.23	0.81
To stimulate the interest of the learners.	4.21	0.81
To broaden perspective of learning	4.34	0.80
To sense and learn from real experiences	4.37	0.80
To enhance development in learning	4.32	0.76

Table 3: Five-Point Scale Measures Agreement of Interest in Using Self-Access Learning Resources Outside-Classroom of Respondents

The survey data from Table 3 indicated that respondents were interested in using outside-classroom learning resources in all aspects. Particularly in the value of learning from real experiences, the survey data reflects the characteristics of being ready to allow themselves to learn from outside classroom resources. This point is related to Tomas Chamorro-Premuzic, referred that the curiosity quotient (CQ) leads to higher levels of intellectual investment and knowledge acquisition over time, especially in formal domains of education, such as science and art (Tomas Chamorro-Premuzic, 2014). Likewise, cognitive neuroscience expands fun in a learning experience and the ability to memorize the content since emotions affect feelings and learning (Regate and Geoffrey Caine, 1990). Moreover, this performance will lead to limitless knowledge expansion for the learners.

Educational providers can offer positive and attractive media to approach their digital lifestyle behavior. Creating an online platform is an effective medium for communicating and motivating them to embrace and engage in visual creative knowledge content. The observation of online media determined that many educational providers in Thailand are inapplicable to Thai digital natives. The valuable knowledge should improve visuals and well-organized structure using design communication.

In the following process, the study focuses on digital communication ways and best practices on online platforms to appeal to Thai digital natives.

### **Analysis of Research Papers and Best Practices Process**

Articles with consistent content related to the study were analyzed and synthesized to create a design guideline for Thai digital natives. Based on the article in the journal of advertising research revealed that digital natives are intrigued with interactive digital technology and expect functional interactivity on the digital information product (Kirk et al., 2015). In the educational environment, Riegel and Mete (2017) indicated that digital natives are comfortable using digital multimedia resources to get most of the learning in the classroom. Besides, the integration of technology into everyday life impacts the delivery of educational expectations (Reigel & Mete, 2017).

In Thailand, the research about modern learning styles for digital natives, Thianthai and Tamdee (2022) informed that digital technology has become a significant factor in self-directed learning and affects educational efficiency. The study on innovative media for Thai digital natives to expand their knowledge about digital citizenship found that a responsive

website, infotainment, motion graphics, and short-form video program style are highly appropriate for communication (Dhamanitayakul, 2019).

Process two is to develop data analysis of best practices on a responsive website platform. The study uses a content analysis form to evaluate the content and apply a procedure of The IOC Index by three experts to measure the reliability of the research instrument. There are two parts to the content analysis form; part 1) usability and functionality analysis and part 2) User Interface design and visual elements analysis. The responsive website platform set criteria to nominate the awards to match two of three top international web competitions established for more than ten years includes of; Webbyawards.com, Awwwards.com, and Thefwa.com.

In this research, the researcher considered a museum website responsive as related educational content for study. There are 234 websites found on Webbyawards.com, 42 websites found on Awwwards.com, and 297 websites found on Thefwa.com. The selection of 25 responsive websites matched two of three in the top international web competitions and met the criteria analyzed using the best practices analysis form. The researcher studied those 25 best practice websites in two main elements as the followings:

- 1) Usability and Architectural Structure; content & feature, above the fold & key feature, functionality, efficiency, front end framework, consistency, grid structure, and transitional techniques.
- 2) User Interface Design; visual elements, graphic design directions, typography, image/photography, design principles, color theory, and communication techniques.

## Results

The key impacts of creating a design guideline are high value and engagement. This finding leads to enhance lifelong learning for Thai digital natives and can define into four elements; 1) Responsive design, 2) Multiple Social Media, 3) Infographic or Infotainment, and 4) Modern or Up-to-Date Design.

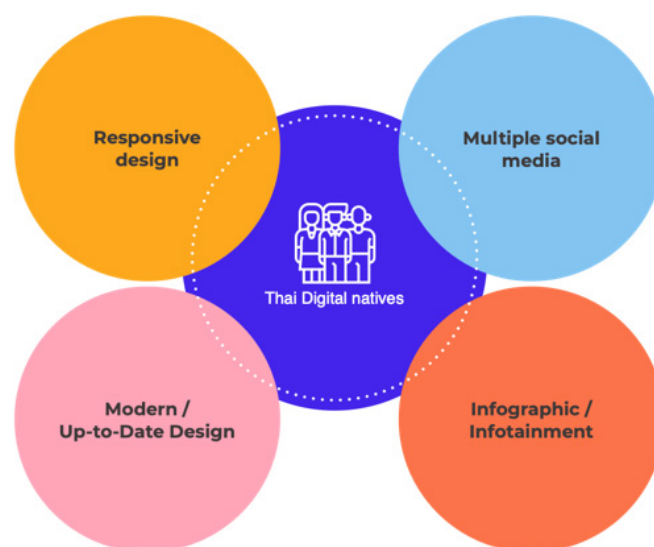


Figure 1: Four Elements to Creating a Design Guideline Online Platform for Thai Digital Natives

## Applying Result to Online Platform

As a result of the study, the design guideline was applied to an online platform to verify the result. The researcher desired a responsive website prototype for The National Aviation Museum of the Royal Thai Airforce. The museum was established in 1952 to collect, preserve and restore different airplanes and other aviation equipment. The national museum represents strength with high management potential and maintains an ability to develop a communication platform for the public. This museum ranked second place among the top ten aviation museums in Asia. (aviationnews.eu, 2019) However, a talk with the museum director reported that our free entry museum is a challenge in lower visiting of Thai younger generations. Most recent visitors have come from China, ASEAN, and western countries.

One of the influential factors for an impactful medium is the appropriate media for the target audience. The current website of the museum provides general information for visitors. Nevertheless, the website design can develop using the design guideline to enhance lifelong learning. The prototype started with the design brief using the design thinking process. Next, gathering all information and determining the vision/goal of the museum to analyze a user experience persona and to re-structure its website flow.

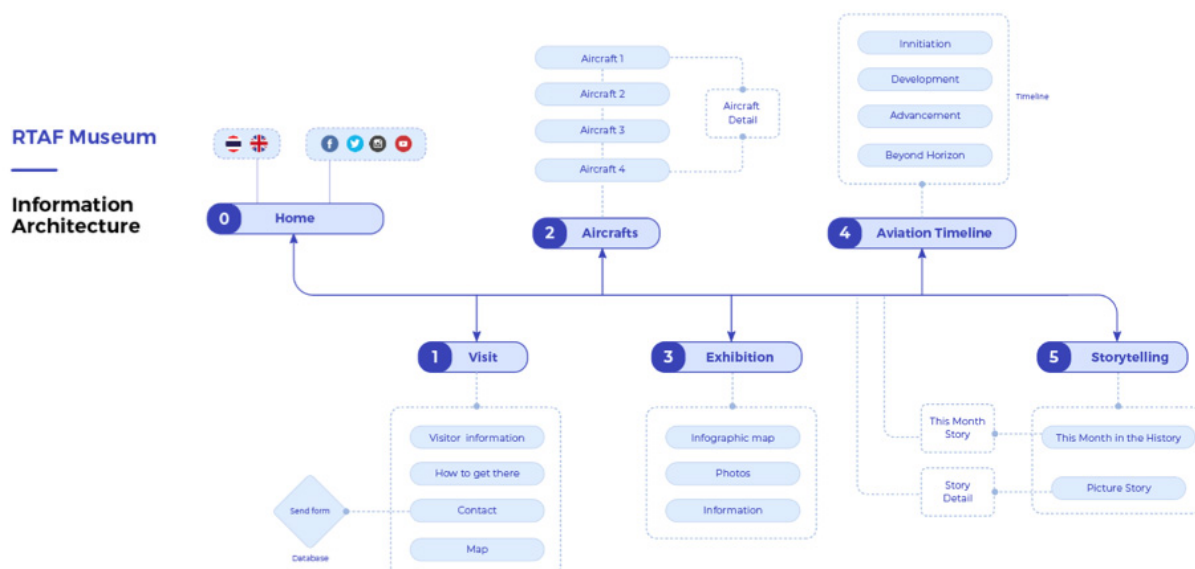


Figure 2: Re-Design Structure of Website Flow

The website flow in Figure 2 has been re-structure containing five main menus considered in order by target group behavior for engaging and preferable information. Then, develop a concept design, decide how to convey a message, and deliver the mood and tone of the overall look under the museum corporate identity.



Figure 3: Key Words, Color Scheme, Typeface, and Mood & Tone for the concept “Dare to Dream”

The researcher applied the design guideline from the finding and created three design directions for the Home page under the concept of, Dare to Dream.



Figure 4: The Prototype of Online Platform for Museum to Encourage Lifelong Learning among Thai Digital Natives



The prototype responsive website represents four main elements; responsive design, multiple social media networks, modern style, and adding more infographics on the icon kit. Another concerning design development is to create micro-animation and transition techniques, using a parallax style to intrigue users on all main pages. Lastly, the online platform may offer users by including an AR interactive activity from an online platform to explore onsite visiting.

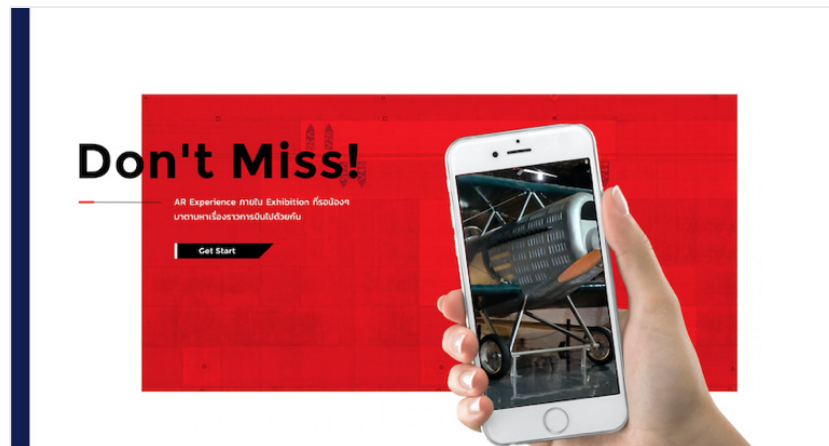


Figure 5: Sample of Layout Design for AR Activity on Home Page of the Responsive Website



Figure 6: Homepage of a Current Website (Left) and Re-Design Prototype Website (Right)

### Verifying Website Responsive Prototype

The prototype was introduced to fifteen Thai digital natives to interact with a website platform as a focus group discussion. They reflected that the new website was attractive and enjoyable to interact with micro animation on the icons. The user interface design is up-to-date on the trends and enhances engaging interaction. This prototype website encourages them to visit the museum and expect to join activities in the future.



Figure 7: QR code For the Access of the Responsive Website Prototype

## **Conclusions**

The result of creating design guidelines for online platforms to encourage lifelong learning among Thai digital natives performed an improvement in an online platform. The significant finding of the design guideline can captivate self-access learning and bridge knowledge from the educational provider to Thai digital natives. This approach facilitates the target audience to become lifelong learners for their entire life. Additionally, the educational provider adapting this design guideline could benefit from updating their communication platform to appeal to young generation users. The culture of learning experience can widely develop and expand to social communication through the online platform.

## **Suggestions**

For apply the design guideline

1. To develop the design guideline for the online platform, the creator requires responsive website knowledge, visual communication background, or related experience skills.
2. The online platform requires a maintenance system to remains all functions and features. The provider should monitor errors and check difficulties regularly.
3. An innovative online platform expresses creative content with attractive interaction or activity through visual elements.

For a further study

1. Research on the readiness of educational providers should conduct to study the development of the online platform to enhance learning resources for lifelong learners.
2. Research on emerging technology can renew existing media and improve the quality of learning experiences.

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