



PROCEEDINGS OF

THE 10th REGIONAL CONFERENCE ON GRADUATE RESEARCH

THEME: Breakthrough Business Creativity, Leading Change, and Reengagement

7 August 2022

Sripatum University, Bangkok, Thailand















Editors:

Vichit U-on George C. Hadjinicola



Graduate College of Management

Sripatum University, Building 11, floor 11, 2410/2 Phaholyothin Road, Jatujak, Bangkok 10900, Thailand Tel: (+66) 2579 1111 ext. 3000 - 4 Fax: (+66) 2579 1111 ext. 3011 E-Mail: phongvitchulada.su@spu.ac.th





Sripatum International College

Sripatum University, Building 11, floor 8, 2410/2 Phaholyothin Road, Jatujak, Bangkok 10900, Thailand Tel: (+66) 2579 1111 ext. 1017, 1018, 1308 Fax: (+66) 2558 6868 E-Mail: intl@spu.ac.th

Proceedings of The 10th Regional Conference on Graduate Research



Theme: Breakthrough Business Creativity, Leading Change, and Reengagement 7 August 2022 Sripatum University, Bangkok, Thailand

Organized by







In Cooperation with



Sponsored by



Edited by Assoc. Prof. Dr. Vichit U-on, Sripatum University, Thailand

Prof. Dr. George C. Hadjinicola, University of Cyprus, Cyprus

Published by Sripatum University Press

2410/2 Phaholyothin Road, Jatujak, Bangkok, 10900, Thailand



Abstracting and nonprofit use of the material is permitted with credit to the source. Instructors are permitted to photocopy isolated articles for noncommercial use without fee. The authors have the right to republish, in whole or in part, in any publication of which they are an author or editor, and to make other personal use of the work. Any republication or personal use of the work must explicitly identify prior publication in *Proceedings of Abstracts and Papers (on CD-ROM) of The 10th Regional Conference on Graduate Research 2022 (V. U-on and G.C. Hadjinicola, Editors)* including the page numbers.

Proceedings of Abstracts and Papers (on CD-ROM) of *The 10thRegional Conference on Graduate Research 2022*

Copyright ©2022

By Academic Service Center, Sripatum University (Thailand); Graduate College of Management, Sripatum University (Thailand); University of Cyprus (Cyprus); and University of Wollongong in Dubai (United Arab Emirates)

All rights reserved.

All papers in the proceedings have been peer reviewed by experts in the respective fields. Responsibility for the contents of these papers rests upon the authors, not Sripatum University.

ISBN: 978-974-655-470-1

Published by Sripatum University Press 2410/2 Phaholyothin Road, Jatujak, Bangkok, 10900, Thailand

Welcome Address from Conference Honorary Chair

It is a great pleasure and honor for me, on behalf of The 10th Regional Conference on Graduate Research 2022, to welcome you all to the world famous festival. First of all, I would like to thank the co-organizers, namely Academic Service Center, Sripatum University (Thailand); Graduate College of Management, Sripatum University (Thailand); University of Cyprus (Cyprus); and University of Wollongong in Dubai (United Arab Emirates) for organizing this conference, which is a major multidisciplinary regional platform and important event in the Asean region.

To support the Asean destination for international visitors, the organizers selected Bangkokas a conference venue due to its capital and most populous city of Thailand. Bangkok is a city of contrasts with action at every turn. Marvel at the gleaming temples, catch a tuk tuk along the bustling Chinatown or take a longtail boat through floating markets. Food is another Bangkok highlight, from local dishes served at humble street stalls to haute cuisine at romantic rooftop restaurants.

To conclude my address, I would like to thank Sripatum University, University of Cyprus, and University of Wollongong in Dubai that have assisted in the organization to this conference to promote a tourist destination in Bangkok to our delegates and guests.

I wish good results in your deliberations.



Dr. Rutchaneeporn Pookayaporn Phukkamarn President, Sripatum University, Thailand RCGR 2022's Honorary Chair

Welcome Address from Conference General Chairs

On behalf of Sripatum University (Thailand); Graduate College of Management, Sripatum University (Thailand); University of Cyprus (Cyprus); and University of Wollongong in Dubai (United Arab Emirates), we would like to welcome you to participate in the 10th Regional Conference on Graduate Research 2022 which will take place at Sripatum University on 7 August, 2022 in Bangkok, Thailand.

The conference will be an exciting event bringing international and interdisciplinary expertise in a rapidly developing field together for one day. It will provide an opportunity for experts in business, management, marketing, accounting, communication arts, social sciences, humanities, science, and engineering from worldwide to exchange and discuss ideas and information.

In a present and future issue, we will cover more on the following topic as "Breakthrough Business Creativity, Leading Change, and Reengagement". This Conference delivers the most up-to-date issues, and also provides opportunity for CIOs, CEOs, industry leaders, managers, academics, and government officials to exchange ideas on future business co-operation trends and best practices. This one day conference is an excellent opportunity for you to meet with other professional members from all over the world, share the view of graduate research internationally.

We would also like to take this opportunity to express our sincere thanks to all the presenters, delegates, reviewers, advisory committee members, local organization committee members, and guest speakers for their interesting and valued contributions. On behalf of the organizers, we would like to personally apologize for any difficulties you might have encountered while attending this conference and wish all of you a very successful and fruitful deliberations.



Assoc. Prof. Dr. Vichit U-on Sripatum University, Thailand RCGR 2022's General Chair



Prof. Dr. George C. Hadjinicola Lecturer, University of Cyprus, Cyprus RCGR 2022's General Chair



Assoc. Prof. Dr. Ioannis Manikas University of Wollongong in Dubai, United Arab Emirates RCGR 2022's General Chair

Welcome Address from Conference Program Chairs

Welcome to the 10th Regional Conference on Graduate Research 2022 in Bangkok, Thailand. This professional meeting is thought to provide an excellent opportunity for faculty, scholars, Ph.D. students, administrators, and practitioners to meet well-known experts from all over the world and to discuss innovative ideas, results of research, and best practices on various topics of Business, Management, Marketing, Accounting, Communication Arts, Social Sciences, Humanities, Science, and Engineering, and many other related issues.

The RCGR conference continues to be highly competitive and very well perceived by the international community, attracting excellent contributions and active participation. This year, researchers from more than 5 countries have submitted their papers to the 10th RCGR 2022 international conference. After a careful review process by members of the international program committee, 130 quality papers from 2 different countries (China and Thailand) have been accepted for presentation at the conference. We thank all authors who dedicated a particular effort to contribute to the conference.

Each submitted paper has been reviewed by several members of the international program committee and international external referees. We would like to thank all of them for their help with review process of submitted papers. We expect the RCGR 2022 international conference to be an outstanding international forum for the exchange of ideas and results on management, business, economics, tourism, transport, logistics, production, operations, and supply chain, and provide a baseline of further progress in such areas.

We wish you a pleasant stay in Bangkok, and a successful conference.



Asst. Prof. Dr. Ungul Laptaned Thai Researchers' Consortium of Value Chain Management and Logistics, Thailand RCGR 2022's Program Chair



Prof. Dr. Andreas C. Soteriou Lecturer, University of Cyprus, Cyprus RCGR 2022's Program Co-Chair

Speaker Background



Dr. Mariano Carrera

Dr. Carrera has nearly 10 years of teaching experience and has a proven track record of being published in numerous journals including presentations at various academic conferences. His areas of excellence are Training & Development, Decision Making, Writing, Research, Management, Strategic Planning and Team Leadership. In retrospect, building on the almost 20 years as a petroleum geologist where he was actively involved in the surrounding disciplines to better understand and position myself as a specialist geologist and generalist petroleum professional. He has the full field development experience from concept exploration to redevelopment. This broadening of his awareness has helped him moved from the petroleum industry to academia. Dr. Carrera has designed and delivered several undergraduate courses using a variety of learning approaches to meet international standards.

Committee

Honorary Chair

Rutchaneeporn Pookayaporn Phukkamarn, Sripatum University, Thailand

General Chairs

Vichit U-on, Sripatum University, Thailand

George C. Hadjinicola, University of Cyprus, Cyprus

Ioannis Manikas, University of Wollongong in Dubai, United Arab Emirates

Program Chairs

Ungul Laptaned, Thai Researchers' Consortium of Value Chain Management and Logistics, Thailand

Andreas C. Soteriou, University of Cyprus, Cyprus

Secretariat

Sawalee Naebnual, Sripatum University, Thailand

Proceedings Editors

Vichit U-on, Sripatum University, Thailand

George C. Hadjinicola, University of Cyprus, Cyprus

Advisory Committee

Bart MacCarthy, The University of Nottingham, UK

Erik J. de Bruijn, University of Twente, The Netherlands

John Liu, The Hong Kong Polytechnic University, Hong Kong

Kai Mertins, Director Corporate Management, Berlin, Germany

Patrick Le Mestre, Le Havre University, France

Pavel Catska, University of Canterbury, New Zealand

Rajesh Piplani, Nanyang Technological University, Singapore

Reza Lashkari, University of Winsor, Canada

Saibal Ray, McGill University, Canada

Subash Wadhwa, Indian Institute of Technology, India

Suhaiza Zailani, University Sains Malaysia, Malaysia

Udisubakti Ciptomulyono, Sepuluh Nopember Institute of Technology, Indonesia

Wuyi Zhang, Kunming University of Science and Technology, China

Review Committee

Dag Naslund, University of North Florida, USA

Fazli Idris, Universiti Kebangsaan Malaysia, Malaysia

Franck Brulhart, Université Aix-Marseille, France

Gizelle Willows, University of Cape Town, South Africa

Imad Alsyouf, Växjö University, Sweden

Jia Yan, The Hong Kong Polytechnic University, Hong Kong

Matthieu Lauras, Ecole des Mines d'Albi-Carmaux, France

Pavel Castka, University of Canterbury, New Zealand

Suhaiza Zailani, University Sains Malaysia, Malaysia

Tore Markeset, University of Stavanger, Norway

Udisubakti Ciptomulyono, Sepuluh Nopember Institute of Technology, Indonesia

Organizing Committee

Anucha Boonma, Sripatum University, Thailand

Jukkapan Yunbuabarn, Sripatum University, Thailand

Natsapun Paopun, Sripatum University, Thailand

Nilubon Sivabrovornvatana, Sripatum University, Thailand

Niwat Chantharat, Sripatum University, Thailand

Nontipan Prayurhong, Sripatum University, Thailand

Panida Angwarawong, Sripatum University, Thailand

Praphan Chaikidurajai, Sripatum University, Thailand

Sawalee Naebnual, Sripatum University, Thailand

Suchiraporn Techothitima, Sripatum University, Thailand

Supannee Kamma, Sripatum University, Thailand

Suree Pruektaveesak, Sripatum University, Thailand

Uthairat Muangsan, Sripatum University, Thailand

0115	Applying Management Principles for Hotel Organization Survival after the Impact of COVID-19 in Phuket Theerapat Kueachoo, Tawit Thinkohyao, and Sirawit Sirirak	. 1699
0116	Motivation Affecting the Staff Performance Efficiency of Panthong Charoen Engineering Co., Ltd	. 1713
0124	Motivations Affecting the Generated Income for Game Players in Thailand	. 1731
0125	Development of a Job Safety and the Covid-19 Prevention System for Site Construction	. 1743
0129	The Impact of Game's Live Streaming Platforms on Audiences' Donation	. 1755
0130	An Approach to Develop Competencies for Logistics Management Students in Dual Vocational Education in Eastern Economic Corridor	. 1769
	Public and Educational Administration	
0002	A Relationship of Environmental Stimuli and Technology Acceptance on Continuance Intention to Use Social Media of Customers in Phuket Chamroen Saetan, Pharnras Saetan, Theerapat Kueachoo, and Sirawit Sirirak	. 1785
0030	Public Opinion Towards Work Administration According to Good Governance Principles of Bangkaew Subdistrict Administrative Organization	. 1799
0120	The Use of Good Governance in the Administration of Nong Yao Subdistrict Administrative Organization, Saraburi Province	. 1813
0121	A Study of Reading and Writing Skills Hiragana and Katakana by Using YouTube Teaching Materials	
	and Flipped Classroom for Thai Students Satomi Uchino and Sirinthorn Sinjindawong	. 1825
0122	The Effects of School-Based Tutoring, Gender, Ethnicity, and Disability on Mathematics Academic Achievement: Evidence from United State	. 1839
0126	The Impact of Trade Policy Uncertainty on Thai Exports During the U.SChina Trade War	. 1853
Author	Index	. 1863
List of	Participants	. 1867

A Study of Reading and Writing Skills Hiragana and Katakana by Using YouTube Teaching Materials and Flipped Classroom for Thai Students

by

Satomi Uchino

Student in M.Ed. Innovations in Learning and Teaching, School of Interdisciplinary Technology and Innovation, Sripatum, Bangkok, Thailand Tel: +6694-5680817, E-mail: satomi.uch@spumail.net

and

Sirinthorn Sinjindawong

M.Ed. Innovations in Learning and Teaching, Sripatum University, Bangkok, Thailand Tel: +6684-1024148, E-mail: Sirinthorn.si@spu.ac.th

Abstract

The objectives of this research were: 1) to develop effective Hiragana and Katakana YouTube teaching materials and flipped classroom for Thai students. 2) to compare the reading skills of Hiragana and Katakana before and after study. 3) to study the writing skills of Hiragana and Katakana. and 4) to study the students opinions after using YouTube teaching materials and flipped classroom for Thai students. The target group was new first-year high school 38 students at Satrinonthaburi School. The research instruments were used a reading test of Hiragana and Katakana, a writing test, and a questionnaire survey. The data analysis used frequency, percentage, mean, standard deviation, and t-test dependent. The research results found that 1) effective YouTube teaching materials were developed based on the ADDIE model and Mayer's multimedia design that includes 5 phases called A: Analyze, D: Design, D: Develop, I: Implement, and E: Evaluate. 2) the reading skills of Hiragana and Katakana showed after higher than before the use of YouTube teaching materials with significant at level .05. 3) Flipped classroom using YouTube teaching materials were also found to be effective for writing skills in Hiragana and Katakana. 4) the students opinions after using YouTube teaching materials and flipped classroom were useful and of high quality.

Keywords: Hiragana and Katakana, YouTube teaching material, Flipped classroom

1. Introduction

1.1 Background and Importance of the Problem

According to The Basic Education Core Curriculum B.E. 2551 (A.D. 2008), foreign languages are one of the eight learning areas. There are four learning indicators for foreign languages; Language for Communication, Language and Culture, Language and Relationship with Other Learning Areas, and Language and Relationship with Community and the World.

The criteria for "Language for Communication" are 1) Understanding and capacity for evaluating what has been heard and read through various media, as well as the ability to express opinions based on logical reasoning. 2) Possess verbal communication skills to effectively exchange data and information and effectively express feelings and opinions. 3) Ability to speak and write and present data, information, concepts, and views on a variety of matters. In other words, studying Hiragana and Katakana is a must for high school students in Thailand.

At Satrinonthaburi school, there is a Hiragana and Katakana prep course every year in mid-April and students have to learn in two classes every day for about two weeks. There is a test on the last day, and most of the students who can't pass it are drop out of the Japanese language course and move to another course. After the prep course, the students are taught using Hiragana and Katakana, which makes it difficult for students who cannot read to understand the contents of the class, and the test results are poor.

In previous face-to-face classes, teachers had students show flashcards and let each student answer, write the characters on a worksheet, or do dictation. However, prep courses for the past two years have gone 100% online due to Covid-19. When students write incorrectly, teachers can't notice or show them the correct characters next to them. YouTube teaching materials were created to help Thai students learn Hiragana and Katakana effectively.

1.2 Research Question

- 1. How do create effective Hiragana and Katakana YouTube teaching materials for Thai students?
- 2. Could students' reading skills by using YouTube teaching materials and flipped classroom in Hiragana and Katakana be improved after than before?
- 3. Could students' writing skills in Hiragana and Katakana be improved by using YouTube teaching materials and flipped classroom?
 - 4. How are students opinions about YouTube teaching materials and flipped classroom?

1.3 Research Objective

- 1. To develop effective Hiragana and Katakana YouTube teaching materials and flipped classroom for Thai students.
- 2. To compare the reading skills of Hiragana and Katakana by using YouTube teaching materials for Thai students before and after study.
- 3. To study the writing skills of Hiragana and Katakana by using YouTube teaching materials and flipped classroom for Thai students.
- 4. To study the students opinions after using YouTube teaching materials and flipped classroom for Thai students.

2. Literature Review

2.1 Related Concepts and Theories

2.1.1 Cognitive Theory of Multimedia Learning

Mayer's Cognitive Theory of Multimedia Learning has three assumptions: 1. dual channel, 2. limited capacity, and 3. active processing. Dual channel states that humans possess separate information processing channels for visual/spatial material and auditory/ verbal material. This cognitive theory has three memories; sensory memory, working memory, and long-term memory. Five steps are required for a human to learn in a multimedia environment. The information in words and images is selected after passing through the sensory memory of the eyes and ears. Information is then organized in working memory into separate models that assist the learner in understanding and remembering it. When all of the information is put together in a meaningful way, the new information can be stored in long-term memory.

According to Mayer (2020), there are 15 principles of multimedia design. It consists of five principles for reducing extraneous processing, three principles for managing essential processing, and seven principles for fostering generative processing. In this research, the YouTube materials were created using these principles Signaling Principle, Spatial Contiguity Principle, Temporal Contiguity Principle, Segmenting Principle, Pre-training Principle, and Voice Principle.

2.1.2 Association Method

One of the better techniques for memorizing Hiragana and Katakana is the association method. Kida et al. (2011) define the associative method as a memory technique that uses association formulas between Hiragana and Katakana characters and sounds, character shapes, and picture images to help learners memorize them in a short time. Currently in wide use in Thailand is the Thai version association method created by the Japan Foundation, Bangkok. Suyara (2016) reported that using the Thai association method was particularly effective for zero-beginner Thai learners with no basic knowledge of Japanese. However, some of the IS association pictures did not connect to the recall of the characters and need to be improved.

2.1.3 Flipped Classroom

According to Piaget (Piaget, 1964), there are two processes at work in cognitive developments assimilation and accommodation. Assimilation is the process of modifying or changing new information to fit our schema (what one already knows). Accommodation occurs when we restructure or change what we already know so that the new information fits in better. Repeating these processes in a balanced way to construct a new schema is called equilibration. In the flipped classroom, students form their schema in video learning at home and then learn with classmates and teachers in the classroom then assimilation and accommodation are expected to occur.

2.2 Literature Surveys

YouTube can be considered a valuable learning resource as it allows students to visualize information quickly without relying too much on existing knowledge. Using video materials with discussion, writing, and reading helps students use content knowledge to comprehend, analyze, and

evaluate. Video materials are generally effective in second language learning, although teachers need to consider whether it is appropriate as a teaching tool and how to use them.

Umeda et al. (2009) found that more letters can be learned in a shorter time with the IS association method materials. There is research showing that this method is also effective in teaching pronunciation. Kim (2007) cited two reasons for this: the method associates kana notation and pronunciation with Korean words, thus allowing pronunciation of kana as soon as the corresponding Korean words are associated.

In the flipped classroom, learners become active and motivated learners by interacting with their peers and learning in a relaxed atmosphere. Gómez-Carrasco et al. (2019) stated that using gamification had a positive impact on both extrinsic and intrinsic motivation. Singh (2020) found that flipped classrooms benefited academically underprivileged students more than the typical lecture format. Thongkoo, Panjaburee, & Daungcharone (2019): Improved students' performance and enhanced their learning. Cabi (2018) mentioned that it is recommended that students' motivation and readiness level to learn outside the classroom be identified.

In addition, stated that in-class problem-solving provided "hands-on" support to students. White et al. (2017) pointed out the importance of following up with students who are disengaged in the flipped classroom.

2.3 Conceptual Framework

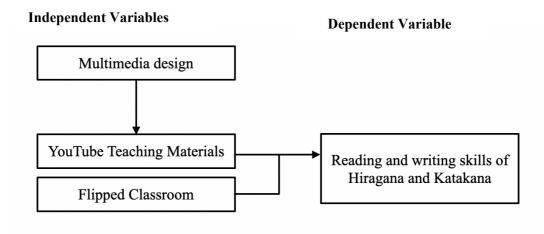


Figure 1 Conceptual Framework

2.4 Research Hypothesis

After studying using Hiragana and Katakana YouTube teaching materials and flipped classroom, then students can get reading skills higher points than before.

3. Research Methodology

3.1 Research Design

This research was conducted in pre-experimental research (one group pre-test post-test design).

To achieve the research objective 1: To develop effective Hiragana and Katakana YouTube teaching materials and Flipped Classroom for Thai students, reading the literature on the cognitive

theory of multimedia learning and multimedia design principles and creating YouTube teaching materials based on findings from this literature.

To achieve research objective 2: To compare the reading skills of Hiragana and Katakana by using YouTube teaching materials for Thai students before and after the study, pre-test and post-test were conducted as quantitative data.

To achieve research objective 3: To study the writing skills of Hiragana and Katakana by using YouTube teaching materials and flipped classroom for Thai students, the writing tests of Hiragana and Katakana were conducted as quantitative data.

To achieve the research objective 4. To study the students, opinions after using YouTube teaching materials and flipped classroom for Thai students, a questionnaire survey was conducted.

3.2 Target group

New first-year high school (M4) students who participate in a prep course of Hiragana and Katakana at Satrinonthaburi School. There were 38 students in total, all girls.

3.3 Research Instruments

The lesson plan for teaching Hiragana and Katakana was evaluated on a 5-point scale, with a score of 4.67 (highest), Reading pre-test and post-test were conducted using Google Forms multiple-choice tests, and the written test was a paper test in which all characters were written in Japanese syllabary order were IOC between 0.67-1.00. The questionnaire survey regarding YouTube teaching materials and flipped classrooms, which was conducted after the class had IOC between 0.67-1.00.

3.4 Data Collection

1. Pre-test

A Hiragana pre-test was given on the first day of the Hiragana and Katakana prep course. The pre-test consists of a Google forms test. The Katakana pre-test was given after the Hiragana class.

2. Writing test

After all Hiragana classes were completed, a Hiragana writing test was given. The Katakana writing test was given after the Katakana classes. The Hiragana test is to write Hiragana by looking at romaji, and the Katakana test is to write Katakana by looking at Hiragana. Both tests were given in the order of the Japanese syllabary.

3 Post-test

After all Hiragana classes were completed, a Hiragana post-test was given. The post-test is the same as the pre-test, with a test using Google forms. The Katakana post-test was given after the Katakana classes.

4. Questionnaire survey

After the Hiragana and Katakana prep course, a questionnaire about the YouTube teaching materials and the flipped classroom was administered. The survey used Google forms.

3.5 Statistics Used for Data Analysis

The writing test was analyzed for the mean, standard deviation. The reading Pre-test and Post-test were analyzed by the t-test dependent. The questionnaire survey was analyzed by frequency and percentage.

4. Data Analysis and Findings

4.1 Process of effective Hiragana and Katakana YouTube teaching Material development

In this research, YouTube teaching materials were created using the ADDIE model.

Analyze:

Conducted a survey of students to rate the Japan Foundation version Hiragana and Katakana IS association method pictures on a scale of 1 to 4 as below using Quizizz.

4-เข้าใจง่ายไม่ต้องเปลี่ยน (It's easy to understand. Don't have to change)

3-เข้าใจใค้ (I can understand)

2-ยากที่จะเข้าใจ (It's hard to understand)

1-ไม่เข้าใจเลยต้องเปลี่ยน (I don't understand, need to be changed)

Then, it was scored to find out what needed to be changed.

Design:

Collected Thai words for use in the new association method. Then, the prototype version was created. Afterward, a questionnaire was taken again to determine whether the prototype version or the Japan Foundation's version was preferable.

Development:

Based on the results of the survey, new illustrations were created with an illustrator with a history of Japanese language study. We then used the illustrations to create YouTube teaching materials. For these materials, we used Mayer's multimedia design principles.

Implement:

A flipped classroom was conducted using the YouTube teaching materials created. Students were instructed to watch the YouTube teaching materials for homework.

Evaluate:

To measure the effectiveness of the YouTube teaching materials, a pre-test, a post-test, and a writing test were administered. Results are described below.

4.2 The results of the reading skills of Hiragana and Katakana by using YouTube teaching materials

In order to compare the reading skills of Hiragana and Katakana by using YouTube teaching materials for Thai students before and after study, a paired t-test was carried out to compare the pretest score and post-test scores.

Table 1 pre-test and post-test of Hiragana

	Mean (total 40 points)	N	Std. Deviation	Std. Error Mean	t	df	Sig.
Post	36.95	38	4.08	.66	12.04*	37	.00
Pre	16.82	38	10.74	1.74			

^{*}significant at level .05

Table 2 pre-test and post-test of Katakana

	Mean (total 40 points)	N	Std. Deviation	Std. Error Mean	t	df	Sig.
Post	34.11	38	5.94	.96	15.86*	37	.00
Pre	13.79	38	8.08	1.31			

^{*}significant at level .05

From these tables the results indicate that the post-test scores (Hiragana: M=36.95, SD=4.08/ Katakana: M=34.11, SD=5.94) were significantly higher (Hiragana: t (37) = 12.04, p<0.05/ Katakana: t (37) =15.86, p<0.05) when compared to the pre-test scores (Hiragana: M=16.82, SD=10.74/ Katakana: M=13.79, SD=8.08). This suggests that the reading skills of Hiragana and Katakana are higher after using YouTube teaching materials.

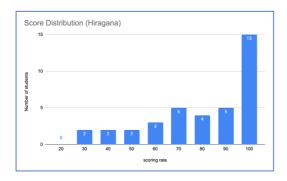
4.3 The result of writing skills in Hiragana and Katakana by using YouTube teaching materials and flipped classroom

In order to study the students' writing skills in Hiragana and Katakana after the flipped classroom, a writing test was given to the students. The writing test consists of writing all Hiragana (Katakana) in Japanese syllabary order. The results show in the table below.

Table 3 Min, Max, Mean, and SD of writing test of Hiragana and Katakana

Statistic	Hiragana (Total score:46)	Katakana (Total score:45)
Min	11	5
Max	46	45
Mean	35.13	30.26
Std.Deviation	10.83	12.33

The writing test was 46 points for Hiragana and 45 points for Katakana, with a mean score of 35.13 points for Hiragana and 30.26 points for Katakana. The standard deviation was 10.83 for Hiragana and 12.33 for Katakana.



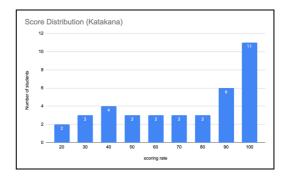


Figure 2 Score distribution of the writing test of Hiragana and Katakana

The figure 2 of score distribution shows that the largest number of students is in the 91-100% range in both Hiragana and Katakana. This means that the flipped classroom had a positive impact on the students' writing skills Hiragana and Katakana.

4.4 Feedback and impressions from students of the YouTube teaching materials

On the question about viewing YouTube materials, 60% of students responded that they "watch it every day" or "almost every day". The 15 students who answered "sometimes" or "not often" were additionally asked the reason for this. Multiple responses were given, with the most common response being "no time to study" (7 students), followed by "I have already studied" (5 students).

The result of the questionnaire surveys the majority of the students found YouTube teaching materials to be useful and understandable in studying Hiragana and Katakana Furthermore, indicate that the length, sound, and illustrations of the YouTube teaching materials created are of good quality.

The results of the satisfaction survey of the flipped classroom on a 5-point scale indicated a high level of overall satisfaction. With regard to the satisfaction surveys for the classroom activities, namely, activities using gamification tools, reading manga, and group activities, the group activities resulted in lower satisfaction than the other classroom activities.

The open-ended answers indicated that some students were unfamiliar with the flipped classroom. Therefore, students' understanding of the purpose and benefits of the flipped classroom could affect their viewing of YouTube teaching materials, test scores, and motivation.

5. Conclusion, Discussion, and Recommendation

5.1 Conclusion

YouTube teaching materials were created using the ADDIE model and Mayer's multimedia design. In "Analysis," a survey was conducted on the pictures of the association method of the Japan Foundation to identify areas that needed to be changed. In "Design," Thai words that could be newly used for the association method were collected and prototypes were created. In Development, a new design was created in collaboration with an illustrator. Then, following Mayer's multimedia design

principles, YouTube teaching materials were created. In the "Implementation", the students actually conducted flipped classroom using the materials created. Finally, in the "evaluation", reading and writing tests were analyzed to verify their effectiveness.

The results of the t-test indicate that post-test scores in Hiragana and Katakana were significantly higher after using YouTube teaching materials than those from the pre-test. This suggests that the reading skills are higher after using online teaching materials.

The results of the writing test of Hiragana and Katakana, the largest number of students is in the 91-100% range of score distribution. This means that the flipped classroom using YouTube teaching materials had a positive impact on the students' writing skills.

The survey results indicate that the majority of students find the YouTube teaching materials useful and understandable for studying hiragana and katakana. Furthermore, the length, audio, and illustration quality of the YouTube teaching materials created have been shown to be high. In addition, the results of the satisfaction survey of the flipped classrooms indicate an overall high level of satisfaction on a 5-point scale. Regarding the satisfaction survey of the following class activities: activities using gamification tools, reading manga, and group activities, satisfaction with the group activities was lower than the other class activities. Free responses indicated that some students were not familiar with flipped classrooms.

5.2 Discussion

YouTube teaching materials were developed based on the ADDIE model. Results of the reading and writing tests of Hiragana and Katakana indicate they were effective for a certain level of learning. Most of the videos to be watched as homework were less than 3 minutes in length. This proves the theory that students who studied with short videos have higher immediate cognitive achievement and posterior cognitive achievement.

Using YouTube teaching materials in a flipped classroom has improved students' reading and writing skills in Hiragana and Katakana. Previous studies on the flipped classroom and student performance have reported improved performance. The theory suggests that presenting information in video format supports both the visual and auditory senses and provides an effective way to teach. Flipped classroom helped disadvantaged students more than the traditional lecture style, leading to a reduced risk of students failing the exam. This could be a major reason for its success.

Students found YouTube teaching materials useful and understandable in studying Hiragana and Katakana. This supports previous research's findings that video materials are useful in second language learning (Chien et al., 2020; Aboudahr, 2020; Kabooha & Elyas, 2018; Yawiloeng, 2020). Students rated the flipped classroom as highly satisfactory on a five-point scale of satisfaction, with the highest score of 5. The flipped classroom was incorporated into the Hiragana and Katakana classes, which tend to be monotonous, and allowed for a variety of activities in the classroom. Since manga and anime are often major motivations for learning Japanese, it is considered that students were highly satisfied with this activity. However, group activities received lower satisfaction scores than the other activities. This could be because students had not yet developed a close relationship with each other and needed more time to get to know each other.

However, the YouTube teaching materials created can fully contribute as the online teaching materials that include pronunciation and explanation of the characters that Suraya (2016) pointed out.

5.3 Recommendation

- 1) Since the target group for this research was a girls' school, the students were all girls. In order to further increase the reliability of this research, the research needs to be conducted in a coeducational school as well.
- 2)The sample size for this experiment was small, therefore experiments with larger groups of students would also be necessary.
- 3)The research will be needed to determine whether the research is effective for all age groups, not just high school students, but also for younger children and adults.
- 4) Hiragana and Katakana classes are usually held at the beginning of the semester. If students do not have a good relationship with each other when they first meet, it will affect their satisfaction with the group activities conducted in the flipped classroom. Therefore, it is a good idea to take some ice-breaking time before the class.
- 5) Thai students may not be familiar with flipped classroom. Clarifying the purpose and benefits of the flipped classroom before class will have a positive impact on viewership of YouTube teaching materials, test scores, and classroom performance.

References

- Aboudahr, S. M. F. M. F. (2020). The Effect of Using Youtube to Increase the Level of Listening Skills Among Non-Native Students of Arabic Speakers in Malaysian Universities. *Education Quarterly Reviews*, 3(2).
- Cabi, E. (2018). The Impact of the Flipped Classroom Model on Students⁷ Academic Achievement. *The International Review of Research in Open and Distributed Learning*, 19(3).
- Chien, C., Huang, Y., & Huang, P. (2020). YouTube Videos on EFL College Students' Listening Comprehension. *English Language Teaching*, 13(6), 96.
- Gómez-Carrasco, C.-J., Monteagudo-Fernández, J., Moreno-Vera, J.-R., & Sainz-Gómez, M. (2019). Effects of a Gamification and Flipped-Classroom Program for Teachers in Training on Motivation and Learning Perception. *Education Sciences*, 9(4), 299. https://doi.org/10.3390/educsci9040299
- Kabooha, R., & Elyas, T. (2018). The Effects of YouTube in Multimedia Instruction for Vocabulary Learning: Perceptions of EFL Students and Teachers. *English Language Teaching*, 11(2), 72.
- Kida, M., Shinozaki, S., Nakamura, M., & Hamakawa, Y. (2011). *The Japan Foundation Teaching Japanese as a Foreign Language Series 3: Teaching letters and vocabulary* [moji goi wo oshieru] (In Japanese) Hitsuji shobou.
- Kim, Y. (2007). A Study on IS Association Method of the Japanese Pronunciation. *The Japanese Language and Literature Association of Daehan, null*(36), 97–110.
- Kida et al. (2011) Multimedia Learning (3rd Edition). Cambridge University Press.
- Piaget, J. (1964). Part I: Cognitive development in children: Piaget development and learning. *Journal of Research in Science Teaching*, 2(3), 176–186. https://doi.org/10.1002/tea.3660020306
- Singh, N. (2020). "A Little Flip Goes a Long Way"—The Impact of a Flipped Classroom Design on Student Performance and Engagement in a First-Year Undergraduate Economics Classroom. *Education Sciences*, 10(11), 319.
- Suyara, W. (2016). Hiragana Memorizing Via Japanese Teaching Model Based on Association Method. *Journal of Education Naresuan University*, 18(4), 29-39.
- Thongkoo, K., Panjaburee, P., & Daungcharone, K. (2019). Integrating inquiry learning and knowledge management into a flipped classroom to improve students web programming performance in higher education. *Knowledge Management & E-Learning: An International Journal*, 11(3), 304–324.
- Umeda, Y., Mizuta, S., & Suzuki, Y. (2009). Evaluation of IS Association Method Hiragana Learning Cards for Korean High School Students in Terms of Memory Strategy and ARCS Motivational Model. 韓国人高校生のための IS 連想法ひらがな学習カードの評価―記憶方略および ARCS 動機付けモデルの観点から― Kankokujin koukouseino tameno IS rensouhou hiragana gakusyu card no hyouka -Kiokuhouryaku oyobi ARCS doukizuke model no kanten kara-Language and Culture Aichi University, 20, 121–139.
- White, P. J., Naidu, S., Yuriev, E., Short, J. L., McLaughlin, J. E., & Larson, I. C. (2017). Student Engagement with a Flipped Classroom Teaching Design Affects Pharmacology Examination Performance in a Manner Dependent on Question Type. *American Journal of Pharmaceutical Education*, 81(9), 5931. https://doi.org/10.5688/ajpe5931
- Yawiloeng, R. (2020). Second Language Vocabulary Learning from Viewing Video in an EFL Classroom. *English Language Teaching*, 13(7), 76.

Sripatum University, Thailand

Sripatum University is one of the oldest and most prestigious private universities in Bangkok, Thailand. Dr. Sook Pookayaporn established the university in 1970 under the name of "Thai Suriya College" in order to create opportunities for Thai youths to develop their potential. In 1987, the college was promoted to university status by the Ministry of University Affairs, and has since been known as Sripatum University. "Sripatum" means the "Source of Knowledge Blooming Like a Lotus" and was graciously conferred on the college by Her Royal Highness, the late Princess Mother Srinagarindra (Somdet Phra Srinagarindra Baromarajajanan). She presided over the official opening ceremony of SPU and awarded vocational certificates to the first three graduating classes. Sripatum University is therefore one of the first five private universities of Thailand. The university's main goal is to create well-rounded students who can develop themselves to their chosen fields of study and to instill students with correct attitudes towards education so that they are enthusiastic in their pursuit of knowledge and self-development. This will provide students with a firm foundation for the future after graduation. The university's philosophy is "Education develops human resources who enrich the nation" which focuses on characteristics of Wisdom, Skills, Cheerfulness and Morality.

University of Cyprus, Cyprus

The University of Cyprus was established in 1989 and admitted its first students in 1992. It was founded in response to the growing intellectual needs of the Cypriot people, and is well placed to fulfill several aspirations of the country. The University is a vigorous community of scholars engaged in the generation and diffusion of knowledge. Despite its brief history, the University of Cyprus has earned the appreciation of Cypriot society. Admission for the majority of undergraduate students is by entrance examinations organized by the Ministry of Education and Culture of the Republic of Cyprus.

University of Wollongong in Dubai, United Arab Emirates

The University of Wollongong in Dubai, abbreviated as UOWD, is a private university located in Dubai, United Arab Emirates. The University is one of the UAE's oldest universities, having been founded in 1993. The Campus has over 3,500 students from more than 108 countries. UOWD is one of the UAE's oldest and most prestigious universities. Established in 1993 by the University of Wollongong in Australia - currently ranked in the top 2% of universities in the world (QS World University Rankings 2018) – UOW in Dubai represents a pioneering Australian initiative in the Gulf region.

Sponsors:



