



ABOUT IJSET

International Journal of Science Education and Teaching (IJSET) is supported by Science Education Association (Thailand) or SEAT. IJSET seeks articles addressing issues including science education, physics education, chemistry education, biology education, technology education, STEM education, science teacher education, early childhood science education, science curriculum and instruction, and other related science educational fields.

Peer Review Process

Articles submitted for publication must never have been previously published or currently under review at another journal. Each paper is reviewed by the editor and, if it is judged suitable for this publication, it is then sent to at least two independent reviewers for double blind peer review. Based on their recommendation, as well as consultation between relevant Editorial Board members the editors then decides whether the paper should be accepted as is, revised or rejected.

Publication Frequency

The IJSET provides an academic platform for work in the fields of interdisciplinary education. The IJSET publishes 3 issues annually. These include:

- Issue 1 (January - April)
- Issue 2 (May - August)
- Issue 3 (September - December)

Issue: IJSET Vol. 3 No. 2 (May – August 2024)

Publication Date: August 30, 2024

Publisher: Science Education Association (Thailand)

IJSET EDITORIAL TEAM

Editors

Assoc. Prof. Dr. Chokchai Yuenyong
 Assoc. Prof. Dr. Prasart Nuangchalerm
 Assoc. Prof. Dr. Saksri Supasorn
 Assist. Prof. Dr. Chanyah Dahsah

Khon Kaen University, Thailand
 Mahasarakham University, Thailand
 Ubon Ratchathani University, Thailand
 Srinakharinwirot University, Thailand

Editorial Board

Prof. Dr. P John Williams
 Prof. Dr. Peter C Taylor
 Prof. Dr. Toshinobu
 Prof. Dr. Chun-Yen Chang
 Prof. Dr. Young-Shin Park
 Prof. Dr. Lilia Halim
 Prof. Dr. Hadi Suwuno
 Prof. Dr. Suratno
 Prof. Dr. Manuel Barquilla

Assoc. Prof. Dr. Cathy Bunting
 Assoc. Prof. Dr. Duc Nguyen Mau
 Assoc. Prof. Dr. Nason Phonpok
 Assoc. Prof. Dr. Pongprapan Pongsophon
 Assoc. Prof. Dr. Suthida Chamrat
 Assist. Prof. Dr. Pattamaporn Pimthong
 Assist. Prof. Dr. Theerapong Sangpradit
 Assist. Prof. Dr. Chaninan Pruekpramool
 Assist. Prof. Dr. Phasarabet Wetwiriyasakul
 Assist. Prof. Dr. Siriwan Chatmaneerungcharoen
 Assist. Prof. Dr. Panwilai Dokmai
 Dr. Adchara Chaisri Khureerung
 Dr. Warangkhana Thongnoppakun
 Dr. Suriya Chapoo
 Dr. Jiraporn Tupsai
 Dr. Pratuengsook Maneelam
 Dr. Sukanya Sutaphan
 Dr. Ruhaisa Dearamae

Curtin University, Australia
 Murdoch University, Australia
 Hatanaka Toho University, Japan
 National Taiwan Normal University, Taiwan
 Chosun University, Gwangju, Korea
 Universiti Kebangsaan Malaysia
 State University of Malang, Indonesia
 University of Jember, Indonesia
 Mindanao State University - Iligan
 Institute of Technology, Philippines
 University of Waikato, New Zealand
 Hanoi University of Education, Vietnam
 Srinakharinwirot University, Thailand
 Kasetsart University, Thailand
 Chaing Mai University, Thailand
 Kasetsart University, Thailand
 Srinakharinwirot University, Thailand
 Srinakharinwirot University, Thailand
 Thaksin University, Thailand
 Phuket Rajabhat University, Thailand
 Mahasarakham Rajabhat University, Thailand
 Sakon Nakhon Rajabhat University, Thailand
 Phuket Rajabhat University, Thailand
 Naraesuan University, Thailand
 Khon Kaen University, Thailand
 Khon Kaen University, Thailand
 Khon Kaen University, Thailand
 Yala Rajabhat University, Thailand

TABLE OF CONTENTS

	Page
About IJSET	I
IJSET Editorial Team	II
Author Index	IV
Research Articles	
Development of Virtual Exchange-Learning Management System Platform Combined with Challenge-Based Learning on the Topic of Education Leadership and Disruption in the Digital Era Phongsak Phakamach, Jakrapaddipong Yoncheaun, Ritthidech Phomdee, Songsit Wongsukha, Natchaya Sommartdejsakul	51-66
Development and Evaluation of Grade 4 Printed and Digitized Reading Materials on Topic Light, Heat and Sound Ciara Apao, Johnrico Enricoso, James Carl Sapilan, Ramonito Manugas, Nichem Cuevas, Kim Diate, Sotero Malayao Jr.	67-78
Teaching Thermodynamics Principle of Power Generation with Analogy for Electrical Power Engineering Students to Enhance Their Understanding Burhanuddin Halimi	79-85