International Journal of Instruction

Abstracting / Indexing

ESCI - Emerging Sources Citation Index
ERIC - Education Resources Information Center

Scopus

EBSCO:
The Belt and Road Initiative Reference Source
Education Research Complete
Education Source

Index Copernicus™
Cabell's Directory
Academic Journals Database
EdNA Online Database
ERA - Educational Research Abstracts Online
Electronic Journals Library
Genamics JournalSeek
Ulrich’s Periodicals Directory

Note: International Journal of Instruction has a wide range of abstracting/indexing services. However, the index services have the right of one-sided termination of the contracts and not to publish any of the articles. Therefore, we do not accept any responsibilities caused by indexing problems.
The authors are responsible for the errors, if any, in their published articles.
### Advisory Board

<table>
<thead>
<tr>
<th>Name</th>
<th>Affiliation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assoc. Prof. Fasasi Yunus Adebunmi</td>
<td>NIGERIA</td>
</tr>
<tr>
<td>Asst. Prof. Abdelrahman Mohamed</td>
<td>OMAN</td>
</tr>
<tr>
<td>Assoc. Prof. Orhan Akınoğlu</td>
<td>TURKEY</td>
</tr>
<tr>
<td>Dr. Mohammad Akram</td>
<td>SAUDI ARABIA</td>
</tr>
<tr>
<td>Assoc. Prof. Nor A. Alias</td>
<td>MALAYSIA</td>
</tr>
<tr>
<td>Prof. Akmatali Alimbekov</td>
<td>KYRGYZSTAN</td>
</tr>
<tr>
<td>Assoc. Prof. Ali Al-Issa</td>
<td>OMAN</td>
</tr>
<tr>
<td>Prof. Khaled Al-Ajouna</td>
<td>JORDAN</td>
</tr>
<tr>
<td>Asst. Prof. Hussain Alkharusi</td>
<td>OMAN</td>
</tr>
<tr>
<td>Prof. Isela Almaguer</td>
<td>USA</td>
</tr>
<tr>
<td>Assoc. Prof. Abdu Mohammed Al-Mekhlaf</td>
<td>OMAN</td>
</tr>
<tr>
<td>Prof. Waleed K. A. Ahmed Alzand</td>
<td>KUWAIT</td>
</tr>
<tr>
<td>Prof. Abdullah Ambusaidi</td>
<td>OMAN</td>
</tr>
<tr>
<td>Prof. Neil J. Anderson</td>
<td>USA</td>
</tr>
<tr>
<td>Assoc. Prof. Derek L. Anderson</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Joel B. Babalola</td>
<td>NIGERIA</td>
</tr>
<tr>
<td>Assoc. Prof. Evangelos Bebetsos</td>
<td>GREECE</td>
</tr>
<tr>
<td>Assoc. Prof. Santosh Kumar Behera</td>
<td>INDIA</td>
</tr>
<tr>
<td>Assoc. Prof. Thalia Bellali</td>
<td>GREECE</td>
</tr>
<tr>
<td>Assoc. Prof. Mary Jo Garcia Biggs</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Larry Boles</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Dele Braimoh</td>
<td>SOUTH AFRICA</td>
</tr>
<tr>
<td>Prof. Robert Burden</td>
<td>UNITED KINGDOM</td>
</tr>
<tr>
<td>Prof. Marilyn Campbell</td>
<td>AUSTRALIA</td>
</tr>
<tr>
<td>Assoc. Prof. G. Nathan Carnes</td>
<td>USA</td>
</tr>
<tr>
<td>Dr. Carmencita L. Castolo</td>
<td>PHILIPPINES</td>
</tr>
<tr>
<td>Assoc. Prof. Yong-Fu Chang</td>
<td>TAIWAIN</td>
</tr>
<tr>
<td>Dr. Lockias Chitanana</td>
<td>ZIMBABWE</td>
</tr>
<tr>
<td>Prof. Che Kum Clement</td>
<td>BANGLADESH</td>
</tr>
<tr>
<td>Prof. Dale Cook</td>
<td>USA</td>
</tr>
<tr>
<td>Prof. Valentina Dagiene</td>
<td>LITHUANIA</td>
</tr>
<tr>
<td>Assoc. Prof. Patrick Alan Danaher</td>
<td>AUSTRALIA</td>
</tr>
<tr>
<td>Asst. Prof. Jagannath K. Dange</td>
<td>INDIA</td>
</tr>
</tbody>
</table>

---

**Vol. 15, No. 4**

**October 2022**

**e-ISSN: 1308-1470**

**p-ISSN: 1694-609X**
Asst. Prof. Şahin Danişman, TURKEY
Asst. Prof. Ajay Das, USA
Prof. Estella De Los Santos, USA
Asst. Prof. Ibrahim Delen, TURKEY
Prof. Uğur Demiray, TURKEY
Assoc. Prof. Esra Dereli, TURKEY
Assoc. Prof. Yannis Dimitriadis, SPAIN
Asst. Prof. Goulimaris Dimitris, GREECE
Asst. Prof. Mohamed Elsaadani, EGYPT
Prof. Noriko Fujioka-Ito, ABD
Prof. M. Jayne Fleener, USA
Assoc. Prof. Kristin A. Gansle, USA
Assoc. Prof. Lynn Kelting-Gibson, USA
Prof. Margarita Victoria Gomez, BRAZIL
Prof. Lena Green, SOUTH AFRICA
Asst. Prof. Semra GÜNGÖR, TURKEY
Prof. Carol Hall, UNITED KINGDOM
Prof. Amanzi Hamdan, SAUDI ARABIA
Assoc. Prof. Jace Hargis, USA
Prof. Seyed Ahmad Hashemi, IRAN
Dr. Mark van’t Hooft, USA
Dr. Ghazi Adib Mustafa Husnies, JORDAN
Asst. Prof. Irshad Hussain, PAKISTAN
Jaya Nur Iman, INDONESIA
Prof. Majed Abu Jaber, JORDAN
Assoc. Prof. Jason D. Johnson, UAE
Asst. Prof. Troy Jones, USA
Prof. William E. Doll, Jr., USA
Norma A. Juarez Collazo, BELGIUM
Prof. Gregory J. Kelly, USA
Prof. Shahadat Hossain Khan, BANGLADESH
Prof. Abdalla Mohamed Khataybeh, JORDAN
Prof. Despina Sapountzi-Krepiá, CYPRUS
Prof. Barbara Seidemann, SWITZERLAND
Assoc. Prof. Yilfashewa Seyoum, ETHIOPIA
Dr. Afsaneh Sharif, CANADA
Nazia Sharif, PAKISTAN
Prof. Ramesh Chander Sharma, INDIA
Asst. Prof. Laurie A. Sharp, USA
Prof. Ju-Ling Shih, TAIWAN
Asst. Prof. Mahesh B. Shinde, INDIA
Assoc. Prof. Hosin Shirvani, ABD
Assoc. Prof. Harison Mohd Sidek, MALAYSIA
Assoc. Prof. Parlindungan Sinaga, INDONESIA
Assoc. Prof. Richard B. Speaker, Jr., USA
Prof. N. Suzanne Standerford, USA
Prof. Howard Stevenson, UNITED KINGDOM
Dr. Simon Stobart, UNITED KINGDOM
Assoc. Prof. Pei-Chen Sun, TAIWAN
Prof. Karen Swan, USA
Prof. Jim Taylor, AUSTRALIA
Prof. Siew Ming Thang, MALAYSIA
Prof. Y. Gürcan Ültanir, TURKEY
Dr. Muhammad A. Wahid Usmani, SAUDI ARABIA
Prof. Erwin Wagner, GERMANY
Assoc. Prof. Michael Whitacre, USA
Asst. Prof. Julia Wilkins, USA
Dr. Kung Teck Wong, MALAYSIA
Asst. Prof. Chia Jung Yeh, USA
Prof. Ali Yıldırım, TURKEY
Prof. Allan E. Young, CAYMAN ISLANDS
Asst. Prof. Muhammad Imran Yousuf, PAKISTAN
Dr. Yunisrina Qismullah Yusuf, INDONESIA
Prof. Galip Yüksel, TURKEY
Assoc. Prof. Eleni Zetou, GREECE
## Contents

One of the Best Research Universities in the World the University of Basel: From the Editor
Asim Ari........................................................................................................................................i-iv

Teachers’ Perceptions of Critical Thinking in Primary Education
Loredana Lombardi, Frederick Jan Mednick, Free De Backer, Koen Lombaerts.........................1-16

Design of a Multidimensional Index of Classification of Rankings of Ibero-American Universities
Vanesa Berlanga, Franciele Corti, Eva Perea................................................................................17-34

The Effectiveness of the EIGER Learning Strategy in Promoting Students’ Conceptual and
Algorithmic Understanding of Stoichiometry
Nur Fadillah Anggraeni, Sri Rahaya, Fauziatul Fajaroh, Effendy Effendy.................................35-56

The Effects of Intralingual Subtitles on Jordanian University Students’ Foreign Language Learning
Ahmad S. Haider, Saleh Al-Salman..............................................................................................57-76

Elementary School Teachers’ TPACK Profile in Science Teaching Based on Demographic Factors
Farida Nur Kumala, Anik Ghufron, Pratiwi Pujiastuti.................................................................77-100

The Effect of Guided Inquiry Learning by Virtual Laboratory Assistance in Physics Learning in
Indonesian Senior High Schools: A Meta-Analysis
Syahwin, Tuti Hardianti, Sheila Fitriana.....................................................................................101-114

Pre-Service Teachers’ Perceptions of Teaching Social Studies in the Context of COVID-19 in Oman
Mohammed Abdullah Al-Noﬁli......................................................................................................115-132

Application of Science Integrated Learning in Practicum Assessments to Improve Science Student Teachers’ Creative Thinking
Sajidan, Parmin, Idam Ragil Widianto Atmojo, Gunawan.........................................................133-146

E-teaching Internships and TPACK during the Covid-19 Crisis: The Case of Saudi Pre-service Teachers
Dina Ahmed Ismaeel, Ensaf Nasser Al Mulhim..........................................................................147-166

Evaluation on Practice Assessment of Light Vehicle Chassis and Powertrain Maintenance Subject at Vocational High Schools
Martubi, Herminarto Sofyan, Sudji Munadi..............................................................................167-182

Effect of Online-Based Physical Activity vs. Art Activity on the Joint Attention of Students with ASD
Ayed H. Ziadat..................................................................................................................................183-196

Lack E-Learning Effectiveness: An Analysis Evaluating E-Learning in Engineering Education
Fahmi Rizal, Hendra Hidayat, Putra Jaya, Waskito, Hendri, Unung Verawardina.....................197-220

The Effective Use of Digital Storytelling and Flipped Classroom Instructional Approach to
Improve Science Subjects
Tahira Anwar Lashari, Umair Sajid, Sana Anwar Lashari.......................................................221-232
Studying Future Educational Psychologists’ Readiness for Innovation Management Competencies in Universities of Kazakhstan
Kyrmyzy B. Zhumabekova, Rimantas Zelvys, Nursulu S. Algozhaeva, Meiramkul D. Murzagulova
........................................................................................................................................233-258

The Empirical Study of Factors Affecting Students’ Competence of Fashion Design Education in the Industrial Revolution 4.0 Era
Ernawati, Hendra Hidayat, Sri Rizki Putri Primandari, Feri Ferdian, Reni Fitria
........................................................................................................................................259-276

Examining some of the Challenges that Students Face in Learning about Metabolic Pathways in a Traditional Biochemistry Course
Issa I. Salame, Mohammed Abid, Simon Simms
........................................................................................................................................277-292

Teachers’ and Students’ Attitudes Toward Online Physics Education During the COVID-19 Pandemic in UAE
Khaleel Alarabi, Hassan Tairab, Lutfieh Rabbani, Sara El Hassan Hamad
........................................................................................................................................293-310

Gender and Perception: Implementation of Web-based Character Assessment on Students’ Character Outcomes
Asrial, Syahrial, Dwi Agus Kurniawan, Febri Tia Aldila, Muhammad Iqbal
........................................................................................................................................311-338

Interrelation between Reflective Thinking and Organizational Knowledge with Master Teachers in Hungary
Krisztián Urbán, Judit Szivák
........................................................................................................................................339-358

Assessing the Experience-Sharing Parenting Method through Online Learning during Covid-19 Pandemic
Deni Hardianto, C. Asri Budiningsih, Haryanto, Kukuh Wahyudin Pratama, Syed Kamaruzaman
Syed Ali, Manil Karakauki
........................................................................................................................................359-374

Effects of Teachers’ Demographic Characteristics and Self-Perceived Competencies on Their Self-Efficacy in Implementing Inclusive Education
Samuel R. Olayvar
........................................................................................................................................375-394

Educational Use of Social Media in Primary and Childhood Education Degrees at a Virtual University
Raquel Gil-Fernández, Diego Calderón-Garrido
........................................................................................................................................395-410

Syuraini, Hendra Hidayat, Fitri Dwi Arini, Jamaris
........................................................................................................................................411-434

The Relationships between Gender, Social Expectation, and Decision-Making Processes of Engineering Students
Luis Miguel Dos Santos
........................................................................................................................................435-452

Experiential Learning in Entrepreneurship Teaching: An Evaluation Based on Importance Performance Analysis
Sukardi, Wildan, Armin Subhani
........................................................................................................................................453-472

Assessing the Effectiveness of Problem-Based Learning Across Two Concrete Construction Courses
Anthony Torres, Jiong Hu, Vedaraman Sriram, Araceli Martínez-Ortiz, Jorge Membrillo-Hernández
........................................................................................................................................473-496
Development and Validation Peaceful Classroom Scale: Rasch Model Analysis
Ilfiandra, Nadia Aulia Nadhirah, Dodi Suryana, Aslina binti Ahmad........................................497-514

Covid-19, Stress Factors of Native American and Caucasian College Students, and Implementing Classroom Dialogues
Tara Hembrough, Misty Cavanagh......................................................................................515-534

Exploratory Analysis on Adaptive Reasoning of Undergraduate Student in Statistical Inference
Karunia Eka Lestari, Marsah Rahmatwati Utami, Mokhamad Ridwan Yudhanegara........535-554

Prospective Teachers’ Intercultural Sensitivity alongside the Contextual Factors as the Affective Domain to Realize Multicultural Education
Muhammad Uyun, Idi Warsah......................................................................................555-576

Empowering Global Citizens with Digital Literacy: Modeling the Factor Structure
Jintavee Khiasang, Masami Yoshida.................................................................................577-594

An Investigation of Talk as Interaction at Lower-secondary Schools in Slovakia
Božena Horváthová, Martina Galbová..............................................................................595-612

Development of Local Potential-Based Environmental Care Instrument and its Ability to Reveal Students’ Caring Attitudes at Genders and Grades
Siti Nurhidayati, Endang Susantini, Safnowandi, Fida Rachmadiarti, Khaeruman, Akhmad Sukri.................................................................................................................613-628

Multicultural Study Groups: Long-Term Gains for Peer Facilitators
Olga Khokhotva, Iciar Elexpuru-Albizuri, Lourdes Villardón-Gallego..............................629-644

Influence of Interpersonal Conflict and Social Norms towards Organizational Conflict and Lecturer Occupational Stress
Firman, Ekawarna, Yusdi Anra, Budi Setiawan..................................................................645-666

Mental Health and Social Support of Teachers in Szeged, Hungary
Andrea Masa, Martina Derzsi-Horváth, Orsólyia Tobak, Krisztina Deutsch.....................667-682

Is the Internationalization of Higher Education at Risk? Covid-19 Pandemic and Online Learning of International Students
Marinette Bahtilla, Xu Hui, Awu Isaac Oben..................................................................683-700

The Impact of Covid-19 on Parents of Children with Disability; Educational Needs and Challenges
Ahmad Rababah, Daren Khlaifat, Faisal Abdefattah, Yousef Busaad, Ibrahim Alqaryouti, Abdullah AlAwamleh..............................................................701-722

Fazilah Razali, Tajularipin Sulaiman, Ahmad Fauzi Mohd Ayub........................................723-744

A Meta-Analysis: Emotional Intelligence and its Effect on Mathematics Achievement
Ali Muhtadi, Pujiriyanto, Syafuddin Kaliky, Julham Hukom, Diana Samal.....................................745-762

Participation Motives of Greek Expatriates in the Middle East in Greek Dancing Lessons
Aikaterini Vasilaki, Dimitrios Goulimarlis, Efi Tsitskari, Georgios Kosta........................763-776

Technological Pedagogical and Content Knowledge (TPACK): Analysis in Design Selection and Data Analysis Techniques in High School
Bayu Saputra, Uwes Anis Chaeruman......................................................................777-796
Mapping the Research of Technical Teachers’ Pedagogical Beliefs about Science Technology Engineering and Mathematics (STEM) Education
Muhammad Rashedul Huq Shamim, Md Abdullah Al Mamun, Md. Abu Raihan................797-818
Factors Influencing Teachers’ Implementation of Online Teaching and Learning Mode during Covid-19
Sallimah Mohd Salleh, Rosmawijah Jawawi, Siti Noor Naasirah Syahiirah Abdullah Teo........................................................819-834
Higher Order Thinking Skills Achievement for Biology Education Students in Case-Based Biochemistry Learning
Wiwi Wikanta, Herawati Susilo..........................................................................................835-854
Assessment Development in Measuring Students’ Context-rich Problem-solving Ability in Physics
Giovanni Pelobillo..............................................................................................................855-870
Using Scaffolding Set to Help Student Addressing Socio-Scientific Issues in Biochemistry Classes
Erman Erman, Brijesh Pare, Enny Susiyawati, Martini Martini, Hasan Subekti....................871-888
Economy Skills among Female Mathematics Students at University According to Their Perceived Future Roles
Mansour Saleh Alabdulaziz, Ishraga Arbab Hamad Abdelkarim, Hanaa Abdullah Madkhali.............................................................889-914
The Development of Short Story Writing Teaching Materials to Improve Student’s Writing Skills: A Metaphorming Approach
Yati Suwartini, Ninuk Lustyantie, Muchlas Suseno, Yetti Supriyati, Ilham Falani..............915-934
Understanding Research Trends in HyFlex (hybrid flexible) Instruction Model: A Scientometric Approach
Nina B. Eduljee, Rupak Chakravarty, Karen Croteau, Laurie Murphy.................................935-954
Professional Study Material for Foreign Language Teaching in Advanced Manufacturing Technologies Students
Marta Gluchmanova........................................................................................................955-970
Special Education Teachers’ Perceived Stress towards Transformational Teaching
Sujawarto, Wulan Patria Saroinsong, Chinun Boonroungrut, Kartika Rinakit Adhe, Bundi Purwoko, Yatim Riyanto.................................................................971-986
The Learning Performance of Indigenous Students in Nepali Private Schools: A Mixed-Methods Study
Jiban Khadka, Krishna Prasad Adhihari, Niroj Dahal..........................................................987-1010
Analysis of Mathematical Creative Thinking Skill: In Terms of Self Confidence
Gunawan, Kartono, Wardono, Iqbal Kharisudin.............................................................1011-1034
Toward a Better Understanding of Prep-year Students: What are the Primary Motives for Higher Education?
Marzoq Bataeineh.............................................................................................................1035-1052
Designing the University Competitiveness Management System: Functions, Levels, Objects
Artem Vasiliev................................................................................................................1053-1070
Variability of Students’ Responses to Assessment Activities: The Influence of Achievement Levels
Dennis Alonzo, Tony Loughland

Trial of Synthetic Phonics extended to Storybook Reading to Improve Reading Skills of Indonesian Third Graders Enrolled in a Bilingual School
Naning Tri Wahyuni

Covid-19 Effect on the Assessment of the Use of Smartphone Apps in STEM Learning
Irina Ikonnikova, Fairuza Sabirova, Irina Batrakova, Alla Filippova, Natalya Garnova

The Effectiveness of an Educational Environment Based on Artificial Intelligence Techniques Using Virtual Classrooms on Training Development
Hala Khairy Abdelghany Elghohary, Hla Khalaf Al-Dossary