

# **2021 3rd International Conference on Computer Science and Technologies in Education (CSTE 2021)**

**Online Conference  
28 – 30 May 2021**



**IEEE Catalog Number: CFP21AZ1-POD  
ISBN: 978-1-6654-2664-0**

**Copyright © 2021 by the Institute of Electrical and Electronics Engineers, Inc.  
All Rights Reserved**

*Copyright and Reprint Permissions:* Abstracting is permitted with credit to the source. Libraries are permitted to photocopy beyond the limit of U.S. copyright law for private use of patrons those articles in this volume that carry a code at the bottom of the first page, provided the per-copy fee indicated in the code is paid through Copyright Clearance Center, 222 Rosewood Drive, Danvers, MA 01923.

For other copying, reprint or republication permission, write to IEEE Copyrights Manager, IEEE Service Center, 445 Hoes Lane, Piscataway, NJ 08854. All rights reserved.

***\*\*\* This is a print representation of what appears in the IEEE Digital Library. Some format issues inherent in the e-media version may also appear in this print version.***

IEEE Catalog Number:	CFP21AZ1-POD
ISBN (Print-On-Demand):	978-1-6654-2664-0
ISBN (Online):	978-1-6654-2663-3

**Additional Copies of This Publication Are Available From:**

Curran Associates, Inc  
57 Morehouse Lane  
Red Hook, NY 12571 USA  
Phone: (845) 758-0400  
Fax: (845) 758-2633  
E-mail: [curran@proceedings.com](mailto:curran@proceedings.com)  
Web: [www.proceedings.com](http://www.proceedings.com)

CURRAN ASSOCIATES INC.  
**proceedings**  
.com

# 2021 3rd International Conference on Computer Science and Technologies in Education (CSTE) CSTE 2021

## Table of Contents

Preface	vii
Organizing Committee	viii
Keynotes	x
Sponsors	xi

### Basic Teaching and Methods

Design and Application of Knowledge-Building Smart Learning Environment in Primary Education	1
<i>Junmei Sun (Shaanxi Normal University, China), Dong Han (Shaanxi Normal University, China), Hongliang Ma (Shaanxi Normal University, China), Yibing Zhang (Nanjing Normal University, China), and Yanlin Li (Shaanxi Normal University, China)</i>	
A Research on the Mixed Teaching Mode of “MATLAB Simulation Technology” Based on MOOC+SPOC+Flipped Classroom	9
<i>Yongyu Wang (Shandong Technology and Business University, China)</i>	
Research and Practice of Hybrid Mixed Teaching Mode in COVID - 19 Times	14
<i>Lin Tang (Chifeng University, China), Yanyan Ren (Chifeng University, China), Lijuan Ji (Chifeng University, China), and Rongrong Cui (Chifeng University, China)</i>	
Teaching Reduction as an Algorithmic Problem-Solving Strategy	19
<i>Iris Gaber (The Academic college of Tel-Aviv Yaffo, Israel), Michal Armoni (Weizmann Institute of Science Israel, Israel), and David Statter (Afeka Academic College of Engineering, Israel)</i>	
Empowering Learning in Low-Performing Schools Through Synchronous Remote Twining Classes	27
<i>Xiaolin Liu (Shaanxi Normal University, China), Zixuan Gao (Shaanxi Normal University, China), Xueyan Xia (Shaanxi Normal University, China), Nana Liang (Shaanxi Normal University, China), and Zhiliang Qiao (Shaanxi Normal University, China)</i>	
Application Exploration of Immersive Teaching Method in Medical Experiment Teaching	32
<i>Jie Wu (Xi'an Medical University, China)</i>	
Research on STEM Curriculum Integration Technology	37
<i>Jingyu Nie (Beijing Normal University, China)</i>	

## Advanced Educational Technology and Learning

Simulation of Automatic Overtaking Based on OBU and RSU .43.....	43
<i>Yunxiang Liu (Computer Science Institute Shanghai Institute of Technology, China), Jianlin Zhu (Computer Science Institute Shanghai Institute of Technology, China), Xinxin Yuan (Computer Science Institute Shanghai Institute of Technology, China), Yu Zhang (Computer Science Institute Shanghai Institute of Technology, China), Qi Xu (Computer Science Institute Shanghai Institute of Technology, China), Chunya Wang (Computer Science Institute Shanghai Institute of Technology, China), and Qianxun Guan (Computer Science Institute Shanghai Institute of Technology, China)</i>	
Test Cheating Detection Method Based on Random Forest .47.....	47
<i>Haiyang Hu (Long-Spring Education Group, China), Zhizhuang Li (Long-Spring Education Group, China), and Zisihan Wang (Long-Spring Education Group, China)</i>	
The Design and Evaluation of Teaching Activities Combining Traditional Lantern Craftsmanship with Primary Education in the Perspective of Intangible Cultural Heritage .53.....	53
<i>Xin-Zhu Li (National Taipei University of Technology, Taiwan), Chun-Ching Chen (National Taipei University of Technology, Taiwan), and Xin Kang (Ningbo Tech University, China)</i>	
Student Performance Mining Based on Kernel Density Estimation Interval and Association Rules .58.....	58
<i>Yun Xiang Liu (Shanghai Institute of Technology, China), Feng Zhou (Shanghai Institute of Technology, China), and XinXin Yuan (Shanghai Institute of Technology, China)</i>	
A Theoretical Model for the Design and Development of C-STEM Curriculum in China .64.....	64
<i>Zhihui Yu (Northwest Normal University, China) and Yanjuan Liu (Capital Normal University, China)</i>	
Experimental Research and Application of Computerized Adaptive Tests to Assess Learners' Competencies .69.....	69
<i>Thai Hung Le (VNU - University of Education, Vietnam) and Thai Ha Nguyen (VNU - University of Education, Vietnam)</i>	
Learning Strategy Based on Deep Knowledge Tracing .75.....	75
<i>Ye Tian (Beijing Institute of Technology, China), Zhendong Niu (Beijing Institute of Technology Library, China), and Donglei Liu (Beijing Institute of Technology, China)</i>	
AI Education in Massive Open Online Courses: A Content Analysis .80.....	80
<i>Xinyu Zhou (South China Normal University, China), Yao Tong (South China Normal University, China), Xixin Lan (South China Normal University, China), Kelin Zheng (South China Normal University, China), and Zehui Zhan (South China Normal University, China)</i>	
<b>Author Index</b> 87.....	87