

# Application Report for Ezeamuzie,Ndudi

General Information	
<b>Name</b>	Ezeamuzie,Ndudi
<b>Applicant ID</b>	597903
<b>Applicant Type</b>	External Applicant
<b>Applicant Status</b>	010 Active
<b>Job Opening</b>	48159 - FELLOW, POST DOCTORAL

Contact Information	
<b>Name Prefix</b>	
<b>First Name</b>	Ndudi
<b>Middle Name</b>	
<b>Last Name</b>	Ezeamuzie
<b>Name Suffix</b>	
<b>Address</b>	Rm 401, RunMe Shaw Building Teacher Education and Learning Leadership Unit Faculty of Education, The University of Hong Kong Hong Kong Island, n/a
<b>Preferred Contact</b>	Email

Phone Numbers				
Phone Type	Telephone	Extension	Country Code	Preferred
Home	85268096314			Yes

Email Addresses		
Email Type	Email Address	Preferred
Home	amuzie@connect.hku.hk	Yes

Referral Sources	
<b>How did you learn of the job?</b>	Website
<b>Additional Information</b>	Chronicle of Higher Education
<b>Specific Referral Source</b>	

Education Level	
<b>Highest Education Level</b>	Not Indicated

## Degrees

**Degree** Doctor of Philosophy (PHD)  
**School Name** University of Hong Kong

## Questionnaire

### Additional Questions:

**Question:** Are you currently authorized to work in the United States?

Answers		
Possible Answer	Correct Answer	Selected Answer
Yes	✓	
No		✓

**Question:** Will you now or in the future require visa sponsorship for employment at the University of Missouri-Columbia or UM System?

Note: In compliance with federal law, all persons hired will be required to verify identity and eligibility to work in the United States and to complete the required employment eligibility verification document form upon hire.

Answers		
Possible Answer	Correct Answer	Selected Answer
Yes	✓	✓
No	✓	

## Ndudi Ezeamuzie

Teacher Education & Learning Leadership,  
Faculty of Education  
University of Hong Kong

Email: [amuzie@connect.hku.hk](mailto:amuzie@connect.hku.hk)  
Phone: +852 6809 6314  
Website: <https://ndudi.com>

### SCHOLARLY INTERESTS

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Research Area: STEM Education, Computer Science Education, Teacher Education, Learning Science, Curriculum & Instructional Design, Artificial Intelligence and Data Science in Education.

My research seeks to understand the evolving challenges and design effective learning ecosystems for future education. Through impactful research and teaching, I develop and evaluate how learners are motivated, engaged and immersed in authentic learning to solve real-world problems. I have extensive experience promoting interdisciplinary learning across K–16 levels that are rooted in thoughtful implementation of technological innovations, content knowledge and pedagogical approaches. My research and teaching tackle the multidimensional complexities of learning by examining the learning processes to advance teacher education and learning leadership.

### EDUCATION

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2018 – 2023    **PhD in STEM & Computer Science Education**

Teacher Education & Learning Leadership, Faculty of Education

**The University of Hong Kong**

Advisor: Dr. Jessica Leung; Dr. Dennis Fung

Thesis: *The Nature and Transfer Effects of Computational Thinking in STEM*

I interrogated the theories of computational thinking through a cross-disciplinary lens and designed abstractive-based micro pedagogy that augments students' problem-solving with computational thinking in STEM learning.

2011 – 2012    **MSc in Computer Science**

Faculty of Engineering

**The University of Hong Kong**

2003 – 2008    **BSc in Computer Science**

Faculty of Physical Science

**Nnamdi Azikiwe University**

## RESEARCH & PROJECT EXPERIENCE

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- 2020 – 2021     **Equity in K–12 computer science education: Tracking the challenges in technology-deprived environments** (HK\$ 3,000)  
Project aim: Understand challenges that learners in developing and under-represented regions encounter in computer science education.  
PI: Ndudi Ezeamuzie  
My Role: Coordinator
- ❑ Proposed and obtained funding for the study from the University of Hong Kong.
  - ❑ Conducted programming lessons in the learning experiment comprising 24 science teachers and 150 middle school students in West Africa.
  - ❑ Developed the learning resources, collected and analyzed data, and published two peer-reviewed journal papers.
- 2016 – 2019     **Developing active learning pedagogies and mobile applications in university STEM education** (RCG/ PolyU2/T&L/16-19)  
Project aim: Increase students’ overall learning outcomes by developing educational technologies that will support, motivate and engage learners in active learning.  
PI: Dr. Fridolin Ting  
My Role: Project Associate
- ❑ Conducted a literature review of active learning practices in STEM and co-authored a peer-reviewed journal paper.
  - ❑ Developed the first version of Badaboom – a collaborative and game-based student response system with AI-powered maths and handwriting recognition.
  - ❑ Coordinated team of five developers in designing pedagogically sound educational apps for active learning.
  - ❑ Evaluated apps’ performance and analyzed collected data.
  - ❑ Designed a responsive project website.
- 2016 – 2019     **Coding, design, and global involvement: Engaging students in multi-domain active learning through the creation of mobile apps and an apps resource centre** (RCG/HKBU1/T&L/16-19)  
Project aim: Engage faculty in developing pedagogically sound educational apps and foster creativity among undergraduates through studio-based mentoring in app design.  
PI: Prof. Christopher Keyes  
My Role: Project Associate & App Ambassador
- ❑ Designed training resources.

- ❑ Organised and taught undergraduate coding workshops in Python, Java and App Inventor.
- ❑ Led other workshops on ‘*creative coding and app design for society*’ and ‘*data analytics with Python*’ at the Apps Resource Centre.
- ❑ Mentored 100+ students on software development and creative app design.
- ❑ Designed learning intervention, collected learning process data, interviewed participants and published findings in a peer-reviewed journal as the first author.

## TEACHING QUALIFICATION

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2021	Associate Fellow of Higher Education Academy (AFHEA) Advance HE, United Kingdom
2019	Certificate in Teaching and Learning in Higher Education The University of Hong Kong, Hong Kong

## TEACHING EXPERIENCE

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2019 – 2022	<p><b>Guest Lecturer</b>, Faculty of Education, The University of Hong Kong</p> <p><u>Course</u>: Becoming a Teaching Professional: Education in a Globalized Society</p> <ul style="list-style-type: none"> <li>❑ Delivered lectures on the opportunities and challenges of STEM education.</li> <li>❑ In the course, I engaged students to reflect on their motivation to become a teacher by comparatively reviewing the curriculum and pedagogical issues of STEM education across different regions.</li> <li>❑ For assessment, I tasked students to compare/contrast the STEM practices across selected regions, reflect on the perceived challenges and offer pedagogically sound solutions.</li> </ul>
2019 – 2021	<p><b>Guest Lecturer</b>, Common Core, The University of Hong Kong</p> <p><u>Course</u>: Making Sense of Science-Related Social Issues</p> <ul style="list-style-type: none"> <li>❑ Delivered lectures on the concepts of computational thinking and how the components (e.g., abstraction, algorithm, pattern recognition) support understanding of science and technology. Also, I shared from my research how the concepts will enable citizens to critically evaluate socio-scientific issues.</li> <li>❑ In the lecture, I analyzed authentic examples such as the design of infographics and simple apps to illustrate the connected concepts.</li> <li>❑ For assessment, I tasked students to choose different socio-scientific issues and reflect on how various concepts of computational thinking are integrated and could support making sense of their nature.</li> </ul>

- 2019 – 2021 **Teaching Assistant**, Faculty of Education, The University of Hong Kong  
Course: Methods Course in Science
- ❑ Assisted in preparing learning resources to demonstrate meaningful inquiry-based, collaborative-based and experiential learning.
  - ❑ Supervised laboratory sessions and graded students' assignments.
- 2022 **Instructor**, Faculty of Education, The University of Hong Kong  
Workshop: Making Sense of big data and artificial intelligence in educational research: The computational thinking approach
- ❑ Designed workshop learning resources and conducted 2.5 hours of training for postgraduate students.
  - ❑ Led a live coding session and engaged participants in hands-on Python programming to analyze unstructured texts, appreciate the hidden treasures in big data, and articulate how they support artificial intelligence.

#### **PUBLICATIONS: PEER-REVIEWED**

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- Ezeamuzie, N. O.**, & Ezeamuzie, M. N. (accepted). Multidimensional framing of environments beyond blocks and texts in K–12 programming. *Review of Educational Research*. (Q1; IF = 11.2)
- Ezeamuzie, N. O.** (2023). Abstractive-based approach to computational thinking: Discover, extract, create, and assemble (DECA). *Journal of Educational Computing Research*.  
<https://doi.org/10.1177/07356331221134423> (Q1; IF = 4.8)
- Ezeamuzie, N. O.** (2023). Project-first approach to programming in K–12: Tracking the development of novice programmers in technology-deprived environments. *Education and Information Technologies*. <https://doi.org/10.1007/s10639-022-11180-8> (Q1; IF = 5.5)
- Ezeamuzie, N. O.**, & Leung, J. S. C. (2022). Computational thinking through an empirical lens: A systematic review of literature. *Journal of Educational Computing Research*, 60(2), 481–511.  
<https://doi.org/10.1177/07356331211033158> (Q1; IF = 4.8)
- Ezeamuzie, N. O.**, Leung, J. S. C., Garcia, R., & Ting, F. S. T. (2022). Discovering computational thinking in everyday problem solving: A multiple case study of route planning. *Journal of Computer Assisted Learning*. <https://doi.org/10.1111/jcal.12720> (Q1; IF = 5.0)
- Ezeamuzie, N. O.**, Leung, J. S. C., & Ting, F. S. T. (2022). Unleashing the potential of abstraction from cloud of computational thinking: A systematic review of literature. *Journal of Educational Computing Research*, 60(4), 877–905.  
<https://doi.org/10.1177/07356331211055379> (Q1; IF = 4.8)
- Ting, F. S. T., Shroff, R. H., Lam, W. H., Garcia, R., Chan, C. L., Tsang, W. K., & **Ezeamuzie, N. O.** (2022). A meta-analysis of studies on the effects of active learning on Asian students'

performance in science, technology, engineering and mathematics (STEM) subjects. *The Asia-Pacific Education Researcher*. <https://doi.org/10.1007/s40299-022-00661-6> (Q2; IF = 3.3)

**Ezeamuzie, N. O.**, Leung, J. S. C., Fung, D. C. L., & Ezeamuzie, M. N. (under review). Features of educational system as predictor of computational thinking: A supervised machine learning approach. *Journal of Computer Assisted Learning*. (Q1; IF = 5.0)

**Ezeamuzie, N. O.** (under review). School Characteristics as Predictor of Computational Thinking: A Machine Learning Analysis. *Education and Information Technologies*. (Q1; IF = 5.5)

## CONFERENCE PRESENTATIONS

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**Ezeamuzie, N. O.** (2021, December 8). Focus on problem-solving: Tracking the development of novice programmers in constructionism. *International Conference on Learning and Teaching 2021*, Hong Kong.

**Ezeamuzie, N. O.** (2021, January 19). Convergence of active content and learning: Computational thinking in mitigating the impacts of COVID-19. *Pedagogic & Active Learning Mobile Solutions Symposium*, Hong Kong.

## PROFESSIONAL EXPERIENCE

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2012 – 2021     **Director**, 3C Thinkers Foundation Hong Kong

- ❑ Established this foundation to create equitable access for children, youth, and professionals in computer science education.
- ❑ Provided hands-on and experiential training on Introductory Programming, Software Development, Internet of Things, Artificial Intelligence, Augmented Reality and Data Science.
- ❑ Developed Python, JavaScript, Scratch and App Inventor training material for 22 schools.
- ❑ Accumulated more than 800 hours of teaching programming in secondary schools.
- ❑ Organised professional development programmes for computer science teachers in 22 schools.
- ❑ Trained 150+ professionals in data science, machine learning, and software design methods.
- ❑ Mentored more than 40 professionals to obtain associate certifications from Oracle and Microsoft successfully.
- ❑ Provided pedagogical training for 50+ undergraduate interns to support coding camps.
- ❑ Coordinated the instructional designs and training operations.

## **SERVICE**

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2016 – 2023	Court Interpreter & Translator, Judiciary of Hong Kong SAR (contract)
2020 – 2023	Reviewer, Journal of Educational Computing Research
2021 – 2023	Reviewer, Education and Information Technologies
2022 – 2023	Reviewer, Computers & Education
2022 – 2023	Reviewer, SIGCSE-ACM Conferences

## **AWARDS & MEMBERSHIP AND CERTIFICATION**

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2019 – 2022	Postgraduate Scholarships, University of Hong Kong (HK\$930,000)
2020 – 2023	Member, Association for Computing Machinery
2020 – 2023	Member, Special Interest Group Computer Science Education (SIGCSE)
2016 – 2023	Member of Hong Kong Computer Society

## **CERTIFICATION**

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2016	Oracle Certified Professional in Java Programming
2016	Microsoft Technology Associate in HTML5 App Development
2016	Microsoft Technology Associate in Database Fundamentals
2015	Oracle Certified Associate in Java Programming
2015	Information Technology Infrastructure Library (ITIL) Foundations



**Ezeamuzie Ndudi**

Email: amuzie@connect.hku.hk | Phone: +852 6809 6314 | Website: <https://ndudi.com>

August 15, 2023

The Search Committee

The School of Information Science & Learning Technologies

University of Missouri-Columbia

Application: Postdoctoral Fellow (Ref.: 48159)

I obtained my PhD from the Faculty of Education, University of Hong Kong. Broadly, my research explores how cognitive abilities like computational, system, and design thinking are integrated into Science, Technology, Engineering and Mathematics (STEM) to augment learners' cross-disciplinary problem-solving.

I have extensive experience in leading K-16 STEM and Computing Education. As the App Ambassador in government-funded triennium teaching and learning project on coding, design and global involvement to engage students in multi-domain active learning, I collaborated and supported diverse projects across several universities in Hong Kong including the development of mobile apps for active learning with the POLYU Pedagogic and Active Learning Mobile Solutions and mentored students on creative coding at the HKBU Apps Resource Centre. Success in the above roles stemmed from my eagerness to take ownership and responsibility for tasks, and a forward-thinking ability that challenges the status quo.

I would love to bring my expertise to fill in your search for a resilient postdoc with aptitudes for innovative research in teaching, learning and assessment. My work has revealed the imbalances in technology-enhanced learning between underdeveloped and developed regions in an investigation of how students from technology-deprived classrooms develop programming skills. In another project, I received funding from the university to support schools in developing countries to participate in a learning experiment that exposed students

**Ezeamuzie Ndudi**

Email: amuzie@connect.hku.hk | Phone: +852 6809 6314 | Website: <https://ndudi.com>

and teachers to an abstraction-based pedagogy. I have adopted different research methodologies including experimental, exploratory, systematic, large-scale, case studies, multilevel modelling and data mining approaches in my research. Also, my works have appeared in top SSCI journals such as Journal of Educational Computing Research, Journal of Computer-Assisted Learning, and Education and Information Technologies.

My CV is enclosed for your consideration. I am confident that my experience matches your search for a resilient educator with aptitudes for ground-breaking research and meticulous project management. I look forward to discussing how my background complement your vision on empowering special education students in gaining competence to join the future technology workforce.

Sincerely,

Ezeamuzie Ndudi

## Referees

1. Dr. Jessica Leung

Assistant Professor, Faculty of Education

University of Hong Kong

Email: [leungscj@hku.hk](mailto:leungscj@hku.hk)

Relationship: PhD Advisor

2. Dr. Fridolin Ting

Senior Lecturer, Office of the Vice President (Research and Development) (VP(RD))

The Education University of Hong Kong

Email: [fridolin@eduhk.hk](mailto:fridolin@eduhk.hk)

Relationship: Project Manager

3. Dr. Dennis Fung

Associate Professor, Faculty of Education

University of Hong Kong

Email: [clfung@hku.hk](mailto:clfung@hku.hk)

Relationship: PhD Advisor