

REDA ABU-ELWAN, PHD

PROFESSOR OF CURRICULUM& MATHEMATICS EDUCATION

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Bio

REDA ABU ELWAN is a Professor of Curriculum& Mathematics Education and his research interests are in the area of the preparation of mathematics teachers, classroom assessment, The use of Mathematics Technology, the design of STEM professional development activities, and PD Mathematics Teachers. As I'm working a professor of Curriculum and Mathematics Education in the College of Education at Suez Canal University SCU in (EGYPT) and SQU in Oman I did teach mathematics curriculum content and pedagogy courses for candidate's secondary mathematics and elementary teachers. I supervised more than 125 theses in mathematics Education and nine PhD researchers. In SQU, I was coordinator and author of INCATE-NCTM SPA report for the accreditation of Mathematics Education program (achieving eight years accredited program).

Current Professions:

- **Professor of Curriculum and Mathematics Education in College of Education, Suez Canal University, Ismailia, Egypt.**
- Head of the team preparing the new mathematics curricula for the preparatory stage, which will be implemented in 2025 by decision of the Minister of Education in Egypt
- Editor-in-Chief of Humanities and Social Sciences Journal of Abstracts, which is published in English by the Graduate Studies Sector at Suez Canal University 2023.
- Coordinator of the new general diploma program at the Faculty of Education at Suez Canal University 2024
- Participated in setting tests for selecting new teachers at the Ministry of Education through the Organization and Administration Authority in Cairo 2023
- Accreditation expert for Educational sector for Egyptian Academic Accreditation Authority; preparing new advancement Benchmarks for Teacher Education Colleges.
- Member of Reviewers for Promotion of Associate and Professors in Egyptian Universities Supreme Council for Curriculum and Methods of Teaching Sector.

Education

- 1993: Ph.D. Curriculum and Mathematics Education

Joint channel System between University of Pittsburgh (USA), Suez Canal University (EGYPT), I did spend three years as visiting scholar in school of education in University of Pittsburgh under supervision of Prof. Martin Cohen as a work part of my PhD, I discuss my dissertation in SCU in Egypt

- 1987: M.A., Curriculum & Mathematics Education, College of Education, Suez Canal University (EGYPT)
- 1983: A.B., Mathematics, College of Education, Suez Canal University (EGYPT)

Professional Appointment:

- 2007-present: Professor of Curriculum and Mathematics Education, College of Education, Suez Canal University
- 1998-2021: Assistant Professor, Contract work in Sultan Qaboos University, College of Education (Muscat, Oman)
- 1994-2002; Assistant Professor of Mathematics Education, College of Education, Suez Canal University

I was a coordinator and editor of NCTM-SPA report for the accreditation of Mathematics Education Program in SQU, we achieved the accreditation under NCATE/CAEP NCTM-SPA in 2016 and 2019.

Research

My general areas of interest are; School mathematics curriculum development and professional development of mathematics teacher. More recently, my interest has been developed in what is going on in the uses of educational technology in teaching mathematics such as using graph calculator in mathematics teaching in secondary stage, the uses of the information technology in mathematics learning. Implementing AI in Mathematics teaching, Also using new developed software of interactive mathematics (Cabri II, Cabri 3D). I did try to develop my teaching courses description by integrating such topics and skills on mathematics education program in college of education, SQU. I have a good experience of using: Mathematica, GSP, Drive6, and Graphing Calculator

Google Scholar:

https://scholar.google.com/citations?view_op=new_articles&hl=en&img=Reda+Abu-Elwan#

Research Gate:

https://www.researchgate.net/profile/Reda_Abu_Elwan

Journal Articles

- **Abu-Elwan, Reda** (2020). Using CAS in Teaching Algebra for Candidate Teachers in SQU and Their Beliefs About it. *Journal of Research and Advances in Mathematics Education* (under publishing)
- **Abu-Elwan, Reda** (2019). The Development of TPSM for Future Mathematics Candidates in SQU. *International Electronic Journal of Mathematics Education*, v.14, isuu2 3, pp.467-473
- Hamdan A., Kazem A., Pfeiffr S. and **Abu Elwan R.** (2017). Identification of Gifted Students in Oman: Gender and Grade Differences on the Gifted Rating Scales–School Form. *Journal for the Education of the Gifted*, v.40, n.3, September 2017.
- **Abu Elwan, Reda** (2014). The Effect of Teaching "Chaos Theory and Fractal Geometry" on Geometric Reasoning Skills of Secondary Students. *International Journal of Research in Education Methodology*, V.6, N. 2, PP 804-815.
- **Abu Elwan, Reda** (2014). The Effect of Teaching "Chaos Theory and Fractal Geometry" on Geometric Reasoning Skills of Secondary Students. *International Journal of Research in Education Methodology*, V.6, N. 2, PP 804-815.
- **Abu Elwan, Reda** (2014). Developing Algebraic Problem Posing Skills of Prospective Teachers Using Geogebra Environment. *Egyptian Journal of Educational Mathematics*, V. 17, N.5, July 2014
- **Abu-Elwan, Reda** (2007). Using WebQuest to Enhance Mathematical Problem Posing Skills and Beliefs about Problem Posing in Mathematics Learning for Pre-Service Teachers, *International Journal for technology in Mathematics Teaching*, v. 14, n. 4, pp. 39-44, UK.
- **Abu-Elwan, Reda** (2002). Effectiveness of Problem Posing Strategies on Prospective Mathematics Teachers' Performance, *Journal of Science and Mathematics Education in South East Asia*, v. 25, n. 1, pp. 56-69.
- Al Bosaidia, Thuria & **Abu-Elwan, Reda** (2020). Effectiveness of CAS in Teaching Geometry for General Education on Algebraic Thinking and Geometric Thinking, *Egyptian Journal of Educational Mathematics*. V.12,n.8, October.
- Al Noaimi, Shikha & **Abu-Elwan, Reda** (2018). Effectiveness of a Training Program based on Creative Problem Solving Model on the development of Mathematical Power of eighth grade students based on their Mathematical Achievement, *Educational and Psychological Studies Journal*.
- Al Badri, Salama & **Abu-Elwan, Reda** (2017). Effectiveness of a Teaching Program Based on Mathematical Problem Posing on tenth grade student's abilities of Problem Posing. *Egyptian Journal of Educational Mathematics*. V.20,n.10, October, pp.6-47

- Al Badri, Salama & **Abu-Elwan, Reda** (2017). Effectiveness of a Teaching Enrichment Program Based on Mathematical Problem Posing on tenth grade student's abilities of Reasoning and Sense Making. *Educational and Psychological Studies Journal*, v.11, n.2, July, pp.645-665.
- **Abu-Elwan, Reda** & Riefat, Ibrahim (2007). Brain Storming Strategy in the Development of Creative Problem Posing for Basic Education Students. *Egyptian Journal of Educational Mathematics*. v.2, n.10, October, pp.73-116
- Abed, Adnan & **Abu-Elwan** (2007). Effectiveness of Constructivism Model in Mathematics Teaching on Basic Education Students Achievement and their Mathematical Anxiety. *Egyptian Journal of Curriculum and Instruction Studies*. v15, n. 24, pp. 149-180
- **Abu-Elwan, Reda** (2008). The Development of Curriculum Concepts Based on Work Market needs. *Omani Education Vision Journal*, n. 21, Sept. pp.12-17.
- **Abu-Elwan, Reda** & Abed, A. (2002). The Effect of using WEB by Candidates upon their Mathematical Thinking and their Beliefs Toward Teaching. *Journal of Educational Studies of Ain-Shams University*, n.62, 1 Part, pp.135-162
- **Abu-Elwan, Reda** (2001). Effectiveness of a Suggested Unit in Fractal Geometry for Candidates of SQU. *Egyptian Journal of Curriculum and Instruction Studies*. N 72, August, pp. 111-145
- **Abu-Elwan, Reda** & Abed A. (2001). Effectiveness of Teaching Eclectic Model on Candidates Performances in Teaching Mathematics and Their Attitudes toward it. *Egyptian Journal of Curriculum and Instruction Studies*. N 73, September, pp. 121-154
- **Abu-Elwan, Reda** (1999). The Development of Emotional Aspects of Mathematics Curriculum for Basic Education. *Egyptian Educational Mathematics*, v.2, October, pp.249-281

Papers in Peer-Reviewed Conference Proceedings

- Abu-Elwan, Reda (2022). Enrichment of Technology Supported Methods Course Using Mathematics Journals, *Paper presented in the 34th International Conference on Technology*

in *Collegiate Mathematics, (March 24-26, 2022) in Orlando, FL USA*,
<https://web.cvent.com/hub/events/2d6fc8f9-7af4-46e6-bd9b-f7aebf1e99d4>

- **Abu-Elwan, Reda** (2018). The Development of TPSM: Technology, Pedagogy, and School Mathematics for Candidates Future Teachers. *Paper presented in the 30 International Conference on Technology in Collegiate Mathematics, (March 14-18), Washington DC, USA.* (under publication of the proceedings).
- **Abu-Elwan, Reda** (2017). Mathematical Problem Posing and Reasoning Thinking of Prospective Teachers. *Proceedings of the 29th International conference on technology in collegiate mathematics, (March 9-12), Chicago, USA.*
<https://www.pearson.com/us/about/news-events/events/ictcm-archive.html>
- **Abu-Elwan, Reda** (2016). Mathematics Problem Posing Skills in Supporting Problem Solving Skills of Prospective Teachers. *In Csikos, C & Rausch, A and Szitanyi (Eds). Proceedings of the 40th Conference of the International Group for the Psychology of Mathematics Education. V.2, PP.2-10, Szeged,(August 3-7), Hungary*
- **Abu-Elwan, Reda** (2014). Using Graph Calculator in Teaching Algebra for Prospective Teachers and Their Beliefs About it, *paper presented at The 10th IMT-GT International Conference on Mathematics, Statistics and its Applications(ICMSA 2014) Kuala Tringganu, Malaysia (October14-16,2014).*
- **Abu-Elwan, Reda** (2013). Using GeoGbra Environment in Supporting Prospective Teachers on Developing Algebraic Problem Solving Skills, *Proceedings of the Mathematics Education in a Globalized Environment , Torino, Italy 22-26 July,2013.*
- **Abu-Elwan, Reda** (2010). Using Mathematics Journals to Enrich the Mathematics Education Program of Prospective Mathematics Teachers. *Proceedings of Technology and its Integration into Mathematics Education, Malaga, Spain. (5-10 July).*
- **Abu-Elwan, Reda** (2009). Developing Geometric Problem Posing Skills for Prospective Teachers Using Cabri 3D Environment. *Proceedings of the 9th International Conference in Technology in Mathematics Teaching, Metz, France. (6-10 July 2009)*
- **Abu-Elwan, Reda** (2008). The Effect of Cabri Geometry for Developing the Proving Skills of the Omani High School Students. *Proceedings of The 13th International Asian Technology Conference in Mathematics, Bangkok, Thailand. 15 – 19 December 2008*
- **Reda Abu-Elwan** (2007). Effectiveness of Teaching Chaos Theory and Fractal Geometry on Geometric Thinking Skills for Omani Secondary Students. *Proceedings of Third International Conference on Research and Education in Mathematics, Kuala Lumpur, (10-12 April)*
- **Abu-Elwan, Reda** (2006). Developing a " School Mathematics" Course Based on the Information Technology for Prospective Mathematics Teachers in SQU. *Proceedings of the*

Eleventh Annual International Conference on Shaping the future of Science, Mathematics, and Technical Education. Bruni, (22-25 May)

- **Abu-Elwan, Reda** (2005). Using WebQuest to Enhance Mathematical Problem Posing Skills and Beliefs about Problem Posing in Mathematics Learning for Pre-Service Teachers, *In Olivero, F. & Sutherland, R. Eds., Proceedings of the 7th International Conference on Tehnology in Mathematics Teaching, UK, University of Bristol, v2, pp.79-87.*

Conference Talks:

- “New Vision of Mathematics Curriculum for Preparatory stage in Egypt”, The 15th International conference, Egyptian Mathematics Educational Council, Cairo, August 4, 2024
- “Interdisciplinary of Educational Research”, the 7th Graduate conference for College of Education, SCU, Ismailia, March 7, 2024
- “High Ranking Thinking Skills in Mathematics for Basic Education Students Based on a Training Program of Mind Habits Activities in Reasoning Skills”, Omani International conference, SQU, Muscat, December 21, 2021
- “Designing Thinking in STEM Program and Active Learning”, The 8th International conference of Omani Committee, Muscat, December 21, 2022.
- “Scientific Approach for new vision of Egyptian Curriculum”, First educational Studies sector conference, Cairo March 2022
- “Interdisciplinary Knowledge in Mathematics Curriculum, An Approach for Mathematical Thinking”, The 9th International conference of Omani Committee, Muscat, October 10, 2023.

Type of Award / Award Description

2018-2022	“Recognizing and Nurturing the Gifted Potential in Oman: Development of a Multi-Approach Model for the Identification and Enrichment for Gifted Students in Cycle 1 and Cycle 2 Schools”, a member of a Teamwork Researchers with a Grant from (TRC) (\$ 200 000)
2014-2018	“The Identification and Nurturing Giftedness in Oman”, A member of a Teamwork Researchers with a Grant of (\$ 200 000)
2003	“Graphing Calculator in Teaching Algebra for Prospective Teachers”, A project for College of Education, SQU (\$ 4000)
2018	Best PhD thesis as a supervisor from SQU

1993 A grant fro American Research Center (NY University) for a research in development of education in development countries (\$ 8000)

Author of School Mathematics Books for Ministry of Education (Egypt):

A. Textbooks in Arabic:

- Mathematics for the fourth grade in Primary school , First Term, 2000-2001
- Mathematics for the fourth grade in Primary school , Second Term, 2000-2001
- Algebra& Statistics- Teacher Edition- for the first grade of Preparatory School, 1997/1998
- Algebra& Statistics- Teacher Edition- for the Second grade of Preparatory School, 1997/1998
- Mathematics- Teacher Edition- for the Fifth grade of Primary School, 1997/1998
- The Talent Way in Mathematics for The Second grade of Primary School, 98/1997
- The Talent Way in Mathematics for the fourth grade of Primary School, 98/1997

B. Text Books in English for Language Schools for Ministry of Education:

- Mathematics –Workbook- for 4th grade in Primary school, 00/2001
- Mathematics – workbook- for 5th grade in Primary School, 00/2001(Translator)

Projects Reviewer:

- For: Qatar National Research Foundation 2017: UREP22-041-5-013 Using Videos as a nursing math investigation
- 13/6/2017: UREP21-027-5-007 Using Videos as a nursing math investigation
- 8/1/2017: UREP20-027-1-010 Empirical analysis of effect class absenteeism and individual level factors on students' academic performance: A case study of Qatar university
- Oman Research Council: 8 Research Projects (2018-2024)
- New Master of Education Proposal for Zofar University in Oman (March 2023)

Journal Peer Review:

Reviewer for the following Journals:

- Journal of Urban Mathematics Education, USA
- Scientific Research Publication Journal
- Egyptian Journal for Educational Mathematics, Egypt
- Creative Education Journal
- UAE Journal for Educational Sciences, UAE
- College of Education Journal in Suez Canal University

- College of Education Journal in Benha University

Promotion Referee for (Associate and Professor) candidates in:

- Kuwait University (Kuwait)
- King Saude University (Saudia Arabia)
- Al Karthom University (Sudan)
- Ib University (Yemen)
- Faisal University (Saudia Arabia)
- Taiba University (Saudia Arabia)
- Haiel University (Saudia Arabia)
- King AbduAlAziz University (Saudia Arabia)
- Zofar University (Oman)
- Middle East University (Jourdan)

Teaching

Graduate:

- Supervisor of thesis:
- 112 Master degree in Sultan Qaboos University
- 6 Master degree in Suez Canal University
- 6 PhD degree in SQU
- 2 PhD degree in SCU

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| <ul style="list-style-type: none"> • Teaching Mathematics (CUTM 5307) (General Diploma) • Curriculum & Methods of Teaching (CUTM 5301) • Teaching Practice (CUTM 5303) | <p>Methods of teaching mathematics for "General Diplomacertificate" for graduated students from college of science "Mathematics"</p> <p>Mathematics Curriculum: Principles, content organizing and theory. for "General Diploma certificate" for graduated students from college of science "Mathematics"</p> <p>Field training in mathematics teaching skills in middle and secondary schools. for "General Diploma certificate" for graduated students from college of science "Mathematics"</p> |
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- Mathematics Teaching (CUTM5151) (Supervision Diploma)
 - School Curriculum (CUTM 5102)
 - Field Applications (CUTM 5103)
 - Curriculum Theory (6102) Mathematics Education M.A
 - Mathematics Reading in English (CUTM 6154)
 - Mathematics Education M.A
 - Advanced Mathematics Teaching (CUTM 6153) Mathematics Education M.A
 - Methods of Teaching Mathematics (CUTM 6151) Mathematics Education M.A
 - New Trends in Mathematics Strategies
 - Research Seminar in Mathematics Education
- Methods in supervision for mathematics supervisors. (in service supervisors students)
- How to deal with mathematics curriculum standards and implementations with math teachers. (in service supervisors students)
- New trends on supervision techniques for in service supervisors students
- Master level course in curriculum theories and curriculum organizing
- Master level course: developing reading and writing in mathematics database, Eric, D.A.I, and analyzing mathematics teaching articles
- Master level course: advanced technology in mathematics (software in different area of mathematics), Mathematica first level
- Master level course: new trends in learning environment; webquest, e-learning, and graphing calculators
- Master Program
- PhD Program

Undergraduate:

In: SQU:

- Teaching Mathematics I (CUTM 3017)
- Teaching Mathematics II (CUTM 4017)
- School Curriculum (CTUM 3009)
- Teaching Skills (CUTM 4020)
- Teaching Practice I (CUTM 4501)
- Field Experiences (CUTM4500)
- Teaching Practice II (CUTM 4502)

In: SCU:

- Teaching Mathematics II
- Curriculum

