# ABSTRAK

Suhliyatin, Nurus (2025), *Pengaruh Model Quantum Learning Terintegrasi STEM Education terhadap Kemampuan Penalaran Matematis dan Pemahaman Konsep Matematis Ditinjau dari Jenis Kelamin*. Tesis, Penelitian dan Evaluasi Pendidikan, Program Pascasarjana, Universitas Pendidikan Ganesha.

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*Kata-kata kunci: Quantum Learning*, *STEM Education*, penalaran matematis, pemahaman konsep matematis, jenis kelamin.

Penelitian ini bertujuan untuk mengetahui pengaruh model *Quantum Learning* terintegrasi *STEM Education* terhadap kemampuan penalaran dan pemahaman konsep matematis ditinjau dari jenis kelamin. Penelitian ini menggunakan metode quasi experiment dengan desain *Randomized Block Design*, dengan sampel 50 peserta didik kelas VII MTs. Salafiyah Syafiiyah dan MTs SA Nurul Qona'ah yang dipilih secara *simple random sampling*. Instrumen berupa tes penalaran dan pemahaman konsep matematis yang telah diuji validitas dan reliabilitasnya. Analisis data menggunakan MANOVA dan uji lanjut LSD. (1) terdapat perbedaan yang signifikan antara peserta didik yang belajar dengan model *Quantum Learning* terintegrasi *STEM Education* dan model pembelajaran konvensional terhadap kemampuan penalaran dan pemahaman konsep matematis; (2) terdapat perbedaan berdasarkan jenis kelamin, di mana peserta didik laki-laki unggul dalam penalaran matematis dan peserta didik perempuan unggul dalam pemahaman konsep matematis; (3) peserta didik laki-laki yang belajar dengan model *Quantum Learning* terintegrasi *STEM Education* memiliki hasil yang lebih tinggi dibandingkan dengan yang menggunakan model konvensional; (4) peserta didik perempuan juga menunjukkan hasil yang lebih baik saat menggunakan model *Quantum Learning* terintegrasi *STEM Education* dibandingkan model konvensional; (5) tidak terdapat perbedaan yang signifikan antara peserta didik laki-laki dan perempuan yang menggunakan model *Quantum Learning* terintegrasi *STEM Education*; dan (6) terdapat perbedaan signifikan antara peserta didik laki-laki dan perempuan dalam kelompok yang menggunakan model pembelajaran konvensional. Dengan demikian, model *Quantum Learning* terintegrasi *STEM Education* terbukti efektif dalam meningkatkan kemampuan penalaran dan pemahaman konsep matematis peserta didik, serta mampu mengakomodasi perbedaan karakteristik berdasarkan jenis kelamin.

# ABSTRACT

Suhliyatin, Nurus (2025), *The Effect of the Integrated STEM Education Quantum Learning Model on Mathematical Reasoning Ability and Mathematical Concept Understanding as Viewed from Gender*. *Thesis, Educational Research and Evaluation, Postgraduate Programme, Ganesha University of Education.*

*This thesis has been approved and reviewed by Supervisor I: Prof. Dr. I Nyoman Jampel, M.Pd. and Supervisor II: Dr. Ir. I Gede Ratnaya, S.T., M.Pd., MCE.*

*Keywords: Quantum Learning, STEM Education, mathematical reasoning, mathematical concept understanding, gender.*

*This study aims to determine the effect of the integrated Quantum Learning model in STEM Education on mathematical reasoning and conceptual understanding, as viewed from gender. This study uses a quasi-experimental method with a Randomized Block Design, involving a sample of 50 seventh-grade students from MTs. Salafiyah Syafiiyah and MTs SA Nurul Qona'ah, selected through simple random sampling. The instruments used were reasoning and mathematical concept understanding tests that had been validated and reliability-tested. Data analysis employed MANOVA and LSD post-hoc tests. The results of the study indicate that: (1) There is a significant difference between students who learn using the Quantum Learning model integrated with STEM Education and those who use conventional learning models in terms of mathematical reasoning and conceptual understanding abilities; (2) There are differences based on gender, where male students excel in mathematical reasoning and female students excel in mathematical conceptual understanding; (3) Male students who learn using the Quantum Learning model integrated with STEM Education achieve higher results than those using the conventional model; (4) Female students also show better results when using the Quantum Learning model integrated with STEM Education compared to the conventional model; (5) There are no significant differences between male and female students using the Quantum Learning model integrated with STEM Education; and (6) There are significant differences between male and female students in the group using the conventional learning model. Thus, the Quantum Learning integrated STEM Education model has proven effective in enhancing students' mathematical reasoning and conceptual understanding abilities, while also accommodating differences in characteristics based on gender.*