

**PENERAPAN *SOLUTION-CENTRIC STEM QUARTET FRAMEWORK*
UNTUK MENINGKATKAN *CREATIVE THINKING SKILL* DAN
MENGUBAH PERSEPSI *TECHNOLOGY USE* SISWA SMA PADA TOPIK
ENERGI TERBARUKAN**

TESIS

Diajukan untuk memenuhi Sebagian syarat memperoleh gelar Magister
Pendidikan Fisika



Oleh:

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**PROGRAM STUDI MAGISTER PENDIDIKAN FISIKA
FAKULTAS PENDIDIKAN MATEMATIKA DAN ILMU PENGETAHUAN ALAM
UNIVERSITAS PENDIDIKAN INDONESIA
BANDUNG
2023**

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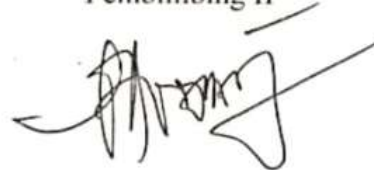
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PERNYATAAN

Dengan ini saya menyatakan bahwa tesis yang berjudul “Penerapan *Solution-Centric STEM Quartet Framework* untuk Meningkatkan *Creative Thinking Skill* dan Mengubah Persepsi *Technology use* Siswa SMA pada Topik Energi Terbarukan”, ini beserta seluruh isinya adalah benar-benar karya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika keilmuan yang berlaku dalam masyarakat keilmuan. Atas pernyataan tersebut, saya siap menanggung risiko/sanksi apabila di kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya.

Bandung, Agustus 2023
Yang membuat pernyataan,

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KATA PENGANTAR

Alhamdulillah, puji syukur penulis ucapkan kepada Allah SWT yang telah melimpahkan rahmat dan karunia-Nya sehingga penulis dapat menyelesaikan tesis yang berjudul “Penerapan *Solution-Centric STEM Quartet Framework* untuk Meningkatkan *Creative Thinking Skill* dan Mengubah Persepsi *Technology use* Siswa SMA pada Topik Energi Terbarukan”. Tesis ini menjelaskan tentang keterlaksanaan pembelajaran *Solution-Centric STEM Quartet Framework*, peningkatan *creative thinking skill* siswa, dan perubahan persepsi siswa terhadap *technology use*.

Penulis menyadari bahwa penyusunan tesis ini masih banyak kekurangannya baik dari segi penyajian maupun penulisan. Penulis mengharapkan kritik dan saran yang sifatnya membangun dari semua pihak untuk kesempurnaan tesis ini. Semoga tesis ini dapat bermanfaat bagi kita semua, khususnya bagi kemajuan dunia Pendidikan.

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UCAPAN TERIMA KASIH

Alhamdulillah segala puji bagi Allah yang telah memberikan nikmat sehingga penulis dapat menyelesaikan tesis yang berjudul Penerapan *Solution-Centric STEM Quartet Framework* untuk Meningkatkan *Creative Thinking Skill* dan Mengubah Persepsi *Technology use* Siswa SMA pada Topik Energi Terbarukan. Selanjutnya ucapan terima kasih ini penulis diberikan kepada:

1. Bapak Arif Hidayat, S.Pd., M.Si., PhD Ed., selaku pembimbing I yang telah memberikan masukan dan semangat dalam proses penyusunan tesis ini. Beliau yang selalu memberikan motivasi untuk terus belajar dan bekerja cerdas;
2. Bapak Prof. Andi Suhandi, S.Pd., M.Si., selaku pembimbing II yang telah membimbing, memberikan masukan, semangat, motivasi, dan arahan dalam penulisan tesis ini;
3. Ibu Prof. Dr. Ida Kaniawati, M.Si dan bapak Dr. Andhy Setiawan, M.Si. sebagai penguji Tesis yang telah memberikan saran atas isi dan kepenulisan Tesis ini.
4. Bapak Dr. Achmad Samsudin, S.Pd., M.Pd., selaku ketua program studi Pendidikan Fisika, sekolah pascasarjana yang selalu memberikan banyak motivasi dan nasihat yang ampuh meningkatkan semangat penulis hingga tesis ini selesai
5. Bapak Dr. Taufik Ramlan Ramalis, M.Si., Bapak Fazli Mirwan, S.Pd., M.Si., dan Ibu Lissiana Nussifera, M.Pd yang telah berkenan menjadi validator dan memberikan masukan dalam draf tesis ini;
6. Ibu Lissiana Nussifera, M.Pd selaku guru Fisika SMA Percontohan Laboratorium UPI, guru-guru STEM yang sudah ikut andil dan siswa-siswi X Bilingual 1 yang telah bersedia untuk menjadi sampel dalam dalam penelitian ini;
7. Orang tua yang telah memberi dukungan penuh pada penyelesaian tesis ini ayah Drs. OK. H. Syarifuddin Rosha dan umi Hj. Dini Safitri, terima kasih sudah mendidik sampai bisa di tahap ini.
8. Kakak dr. Cici Elpida Rosha, Fitri Rahmadhani Rosha, S.Pi., Riza Rizki Ikhwan Rosha, S.STP., dan Dyah Inggit Murtiningrum, S.Pd yang selalu

memberikan dukungan, semangat, dan tenaganya untuk membantu hingga tesis ini selesai

9. Teman-teman seperjuangan kelas A dan B Pendidikan Fisika SPs UPI Bandung Angkatan 2021 yang saling memberi semangat dan dukungan dalam menyelesaikan studi ini;
10. Teman-teman Markaz Qur'an Rabbani, khususnya Milhatunnisa, Ustadzah Hulliyatul, dan Ustadzah Salma yang sudah memberikan motivasi, semangat dan dukungan dalam menyelesaikan studi ini.

Semoga Allah SWT. Senantiasa melimpahkan pahala berkah-Nya kepada pihak-pihak yang telah disebutkan tersebut, Aamiin.

Bandung, Agustus 2023

Penulis,

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ABSTRAK

Penelitian ini bertujuan untuk mendapatkan gambaran mengenai *Solution-Centric STEM Quartet Framework*, peningkatan *creative thinking skill* dan perubahan persepsi *technology use* siswa SMA. Metode penelitian yang digunakan dalam penelitian ini yaitu *mixed methods* dengan *embedded experimental design*. Sampel penelitian terdiri dari 16 siswa di salah satu SMA di kota Bandung. Instrument penelitian yang digunakan yaitu instrument tes dan non-tes. Instrument tes terdiri dari 6 soal esai yang mengukur 4 aspek *creative thinking skill* (*fluency, flexibility, elaboration, dan originality*). Sedangkan instrument non-tes terdiri dari LKPD, angket ISTUP, dan transkrip video pembelajaran. Keterlaksanaan penerapan pembelajaran *Solution-Centric STEM Quartet* dianalisis menggunakan metode transkrip, peningkatan *creative thinking skill* diketahui dengan analisis N-Gain, *racking* dan *stacking analysis*, persepsi *technology use* dianalisis berdasarkan hasil angket ISTUP. Berdasarkan hasil transkrip dan *evidence* pembelajaran diperoleh bahwa pembelajaran *Solution-Centric STEM Quartet Framework* pada penelitian ini yaitu menggunakan solusi sebagai *starting point* dalam pembelajaran, percakapan kelas didominasi oleh siswa, memiliki potensi untuk melatih *creative thinking skill*. Hasil penelitian menunjukkan bahwa terjadi peningkatan *creative thinking skill* dalam kategori sedang dengan perolehan N-Gain sebesar 0.67 dan perubahan persepsi *technology use* siswa terbesar pada aspek persepsi terhadap penggunaan panel surya dan perubahan terkecil pada aspek urgensi kebutuhan *renewable energy*. Perubahan persepsi ini merupakan perubahan positif terhadap persepsi *technology use*. Dengan demikian, dapat disimpulkan penerapan *Solution-Centric STEM Quartet Framework* dapat meningkatkan *creative thinking skill* dalam kategori sedang dan merubah persepsi *technology use* siswa.

Kata Kunci: *Solution-Centric STEM Quartet, Creative thinking skill, Technology use*

**IMPLEMENTATION OF SOLUTION-CENTRIC STEM QUARTET
FRAMEWORK TO IMPROVE CREATIVE THINKING SKILLS AND
CHANGE THE PERCEPTION OF TECHNOLOGY USE OF HIGH
SCHOOL STUDENTS ON RENEWABLE ENERGY TOPICS**

Julia Maysarah Rosha

ABSTRACT

This study aims to get an overview of the Solution-Centric STEM Quartet Framework, improve creative thinking skills and change perceptions of technology use among high school students. The research method used in this research is mixed methods with embedded experimental design. The research sample consisted of 16 students in a high school in Bandung. The research instrument used was test and non-test instruments. The test instrument consists of 6 essay questions that measure 4 aspects of creative thinking skills (fluency, flexibility, elaboration, and originality). While the non-test instruments consist of LKPD, ISTUP questionnaire, and learning video transcripts. The implementation of Solution-Centric STEM Quartet learning was analyzed using the transcript method, the increase in creative thinking skills was identified by N-Gain analysis, racking and stacking analysis, perceptions of technology use were analyzed based on the results of the ISTUP questionnaire. Based on the results of the transcripts and learning evidence, it was found that the Solution-Centric STEM Quartet Framework in this study used solutions as a starting point in learning, class conversations dominated by students, has the potential to train creative thinking skills. The results showed that there was an increase in creative thinking skills in the medium category with an N-Gain of 0.67 and the biggest change in students' perceptions of technology use was in the aspect of perception of the use of solar panels and the smallest change was in the aspect of urgency for renewable energy needs. This change in perception is a positive change in the perception of technology use. Thus, it can be concluded that the application of the Solution-Centric STEM Quartet Framework can improve creative thinking skills in the medium category and change students' perceptions of technology use.

Keyword: STEM Quaret Solution Centric, *Creative thinking skill, Technology use*

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