IMPLEMENTASI *TECHNOLOGICAL PEDAGOGICAL AND CONTENT KNOWLEDGE* (TPACK) MATERI *GLOBAL WARMING* DAN KAITANNYA TERHADAP AKTIVITAS DAN HASIL BELAJAR SISWA SMP

TESIS

diajukan untuk memenuhi sebagian syarat untuk memperoleh gelar
Magister Pendidikan Ilmu Pengetahuan Alam

Oleh

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PROGRAM STUDI
PENDIDIKAN ILMU PENGETAHUAN ALAM
SEKOLAH PASCASARJANA
UNIVERSITAS PENDIDIKAN INDONESIA
2019

HALAMAN PENGESAHAN

IMPLEMENTASI *TECHNOLOGICAL PEDAGOGICAL AND CONTENT KNOWLEDGE* (TPACK) MATERI *GLOBAL WARMING* DAN KAITANNYA TERHADAP AKTIVITAS DAN HASIL BELAJAR SISWA SMP

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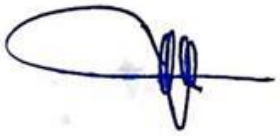

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HALAMAN PERNYATAAN KEASLIAN TESIS

Dengan ini saya menyatakan bahwa tesis dengan judul **IMPLEMENTASI *TECHNOLOGICAL PEDAGOGICAL AND CONTENT KNOWLEDGE* (TPACK) MATERI *GLOBAL WARMING* DAN KAITANNYA TERHADAP AKTIVITAS DAN HASIL BELAJAR SISWA SMP** ini beserta seluruh isinya adalah benar-benar karya saya sendiri. Saya tidak melakukan penjiplakan atau pengutipan dengan cara-cara yang tidak sesuai dengan etika ilmu yang berlaku dalam masyarakat keilmuan. Atas pernyataan ini, saya siap menanggung risiko/sanksi apabila di kemudian hari ditemukan adanya pelanggaran etika keilmuan atau ada klaim dari pihak lain terhadap keaslian karya saya ini.

KATA PENGANTAR

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Salawat serta salam semoga senantiasa tercurah limpahkan kepada Nabi besar Muhammad SAW., keluarganya, sahabatnya, serta kita selaku umatnya hingga akhir zaman. Penulisan tesis ini diajukan untuk memenuhi syarat dalam memperoleh gelar magister pada program studi Pendidikan IPA, Sekolah Pascasarjana Universitas Pendidikan Indonesia.

Tesis ini diangkat penulis karena ketertarikan penulis terhadap bidang kompetensi guru atau pada penelitian ini dipandang sebagai suatu kerangka kerja yang utuh yaitu *Technological Pedagogical and Content Knowledge* (TPACK). TPACK memiliki keunikan tersendiri dalam bidang penelitian pendidikan. Hal ini disebabkan karena variasi kompetensi guru dapat memengaruhi banyak hal dan dipengaruhi oleh banyak hal pula. Oleh karena itu, secara spesifik penulis menulis menganalisis kaitan TPACK yang dimiliki guru dengan aktivitas belajar dan hasil belajar siswa. Selain itu, dalam tesis ini penulis juga membahas bagaimana guru dalam merencanakan serta melaksanakan pembelajaran, sehingga memberikan informasi yang lebih jelas tentang kompetensi TPACK guru.

Semoga tesis ini memberikan manfaat bagi khasanah pengetahuan di bidang pendidikan dan khususnya memberi perkembangan ilmu Pendidikan IPA di lingkungan Universitas Pendidikan Indonesia.

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Bandung, Agusutus 2019

Penulis

Implementasi *Technological Pedagogical and Content Knowledge* (TPACK) materi *Global warming* dan Kaitannya Terhadap Aktivitas dan Hasil Belajar Siswa SMP

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Kemajuan teknologi yang pesat di era revolusi industri 4.0. perlu diiringi dengan pengembangan kemampuan guru untuk mengintegrasikan teknologi ke dalam pembelajaran. Tujuan penelitian ini adalah untuk menganalisis kaitan implementasi strategi TPACK materi *Global warming* terhadap aktivitas dan hasil belajar kognitif siswa. Metode deskriptif diterapkan untuk memperoleh data kemampuan TPACK guru dan implementasinya serta aktivitas dan hasil belajar siswa dengan menggunakan instrumen TPACK, *CoRe*, tes pemahaman konsep dan lembar observasi aktivitas siswa. Pemilihan partisipan pada penelitian ini menggunakan metode *convenience sampling* yang melibatkan tiga orang guru IPA dan siswa SMP kelas VII sebanyak tiga kelas. Hasil penelitian menunjukkan bahwa kemampuan TPACK guru IPA dalam mengajarkan materi *Global warming* berbeda-beda. Hal yang berpengaruh terhadap perbedaan ini adalah usia, pengalaman mengajar guru dan pengalaman mengikuti pelatihan. Karena kemampuan TPACK guru dan kaitannya terhadap siswa memilili pola yang sama, yaitu semakin baik kemampuan TPACK guru maka aktivitas siswa yang diajar juga semakin aktif dan diikuti dengan hasil belajar yang tinggi. Sehingga dapat disimpulkan bahwa kemampuan TPACK guru memiliki kaitan terhadap aktivitas dan hasil belajar siswa. Saran untuk perbaikan penelitian selanjutnya adalah melibatkan lebih banyak guru dengan pengalaman mengajar yang lebih bervariasi. Selain itu, partisipan pada penelitian ini hanya melibatkan guru perempuan saja, sebaiknya melibatkan guru laki-laki sehingga informasi yang diterima pada penelitian ini lebih beragam.

Kata Kunci: Aktivitas siswa, Kompetensi Guru, TPACK, Hasil belajar, Global warming

The Implementation of Technological Pedagogical and Content Knowledge (TPACK) of Global warming topic and it's Relation to Activities and Learning Outcomes of Junior High school students

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Rapid technological advances in the era of the Industrial Revolution 4.0 need to be accompanied with the development of teacher's ability to integrate technology into learning. This study aims to analyze the relation of teacher's TPACK ability of Global warming content to the activity and cognitive learning outcomes of students**.** The descriptive method is applied to obtain the TPACK ability data of the teacher and its implementation and the activities and learning outcomes of the students using TPACK, *CoRe*, concept comprehension test and observation sheet of student activity. The selection of participants in this study used a convenience sampling method involving three science teachers and secondary schools' students grade VII as many as three classes. The results reveal that the TPACK apability of teachers in teaching Global warming was varied. The thing that affects these differences is age, teacher teaching experience and training experience. Because the ability of TPACK and relation to students have the same pattern, that is the better ability of TPACK then the activity of students who are taught is also more active and followed by high learning outcomes. It can be concluded that TPACK's ability of the teacher has a link to students ' activities and learning outcomes. Further research might explore teachers with more varied teaching experience. In addition, participants in this study only involve female teachers, preferably involving male teachers so that the information received on this research is more diversed.

Keywords: student activity, Teacher's Competency, TPACK, learning Outcomes, Global warming

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BAB IV HASIL DAN PEMBAHASAN

BAB V PENUTUP

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