

**IMPLEMENTASI INTERVENSI AFEKTIF OLEH AGEN PEDAGOGIS
BERDASARKAN EMOSI PELAJAR DALAM APLIKASI KONFERENSI
VIDEO PEMBELAJARAN DARING**

SKRIPSI

diajukan untuk memenuhi sebagian dari syarat memperoleh gelar Sarjana
Komputer Program Studi Rekayasa Perangkat Lunak



oleh
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**PROGRAM STUDI REKAYASA PERANGKAT LUNAK
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Sebuah skripsi yang diajukan untuk memenuhi sebagian dari syarat memperoleh
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PERNYATAAN KEASLIAN SKRIPSI DAN BEBAS PLAGIARISME

Dengan ini saya menyatakan bahwa skripsi dengan judul IMPLEMENTASI INTERVENSI AFEKTIF OLEH AGEN PEDAGOGIS BERDASARKAN EMOSI PELAJAR DALAM APLIKASI KONFERENSI VIDEO PEMBELAJARAN DARING 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.

Bandung, 05 April 2024

Yang membuat pernyataan,



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Bandung, 5 April 2024

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ABSTRAK

Emosi merupakan aspek afektif yang penting dalam pembelajaran, emosi positif berkontribusi pada kualitas pembelajaran yang lebih baik dibandingkan emosi negatif yang dapat menghambat proses pembelajaran dan seringkali muncul saat pembelajaran daring sinkronis. Penelitian sebelumnya telah mengimplementasikan *Facial Emotion Recognition* (FER) pada ekstensi peramban browser untuk aplikasi konferensi video dalam mendeteksi emosi pelajar, namun sistem belum bisa memberikan timbal balik adaptif dan personal sesuai kondisi emosi. Penelitian ini mengembangkan fitur intervensi afektif verbal yang dipersonalisasi dalam bentuk pesan motivasi oleh agen pedagogis motivator ketika emosi negatif (sedih, marah, takut, dan jijik) terdeteksi. Berdasarkan pengujian *Instructional Materials Motivation Survey* (IMMS), keseluruhan aspek ARCS mendapatkan nilai rata-rata 3,6 dengan kriteria motivasi “Tinggi” dan pengujian *Naïve rating in Cognitive Load Measures* mendapatkan nilai rata-rata 3,3 dengan kriteria “Kurang Setuju” bahwa intervensi membebankan. Sehingga kesimpulannya intervensi afektif yang dipersonalisasi mempertimbangkan *ARCS Model*, berdampak positif bagi motivasi pelajar tanpa membebankan kognitif mereka selama pembelajaran daring sinkronis.

Kata Kunci: Intervensi Afektif Verbal, Rekognisi Emosi, Agen Pedagogis, *ARCS Model*, Ekstensi Peramban

**IMPLEMENTATION OF AFFECTIVE INTERVENTIONS BY
PEDAGOGICAL AGENTS BASED ON LEARNER EMOTIONS IN ONLINE
LEARNING VIDEO CONFERENCING APPLICATION**

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ABSTRACT

Emotion is an important affective aspect in learning, positive emotions contribute to better learning quality than negative emotions which can hinder the learning process and often appear during synchronous online learning. Previous research has implemented Facial Emotion Recognition (FER) in browser extensions for video conferencing applications to detect learner's emotions, but the system has not been able to provide adaptive and personalized feedback according to emotional state. This research develops a personalized verbal affective intervention feature in the form of motivational messages by a motivator pedagogical agent when negative emotions (sadness, anger, fear, and disgust) are detected. Based on the Instructional Materials Motivation Survey (IMMS) testing, the overall ARCS aspects received a mean score of 3.6 with a motivation criterion of "High" and the Naïve rating in Cognitive Load Measures testing received a mean score of 3.3 with a criterion of "Disagree" that the intervention is burdensome. It can be concluded that the personalized affective intervention considering the ARCS Model, had a positive impact on learners' motivation without imposing cognitive load during synchronic online learning.

Keywords: *Verbal Affective Intervention, Emotion Recognition, Pedagogical Agent, ARCS Model, Browser Extension*

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