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Nama : Reza Edi Saputra

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Aida Rusmarijana, S.Kep., Ns., MAN *aj*

**Program Studi Sarjana
Informatika Fakultas Teknik dan
Ilmu Komputer
Universitas Muhammadiyah Pekajangan Pekalongan**

ABSTRAK

Reza Edi Saputra¹, Aslam Fatkhudin², Imam Rosyadi³

SISTEM PAKAR SI-GOCHILD UNTUK SKRINING TUMBUH KEMBANG ANAK MENGGUNAKAN METODE MMDST DAN STANDAR ANTROPOMETRI DENGAN PENALARAN FORWARD CHAINING

Periode usia dini (*golden age*) merupakan fase kritis penentu kualitas manusia, namun pemantauan tumbuh kembang di Indonesia, khususnya di *daycare*, masih terkendala metode manual yang rentan kesalahan (*human error*) dan subjektivitas. Sistem digital yang ada pun mayoritas hanya berfokus pada stunting tanpa mengintegrasikan aspek perkembangan. Penelitian ini bertujuan merancang sistem pakar berbasis website bernama "*SI-GoChild*" yang mengintegrasikan skrining pertumbuhan dan perkembangan secara komprehensif. Menggunakan metode Research and Development (R&D) dengan model Waterfall, sistem dibangun menggunakan framework Laravel dan basis data MySQL. Logika penalarannya menggunakan metode Forward Chaining yang bersumber dari Standar Antropometri Permenkes No. 2 Tahun 2020 untuk status gizi dan *Metro Manila Developmental Screening Test* (MMDST) untuk perkembangan motorik serta bahasa. Hasil penelitian ini adalah tersedianya aplikasi dengan antarmuka khusus bagi Admin, Pengajar, dan Orang Tua. Berdasarkan validasi pakar domain pada 34 kasus uji, sistem mencapai akurasi diagnosis 100%, serta pengujian kelayakan teknis menunjukkan nilai rata-rata di atas 4.5 (Sangat Layak). Kesimpulannya, "*SIGoChild*" efektif mengatasi kelemahan pencatatan manual, meningkatkan efisiensi operasional daycare, serta memudahkan orang tua memantau grafik tumbuh kembang anak secara real-time dan akurat.

Kata Kunci: *Sistem Pakar, Forward Chaining, Tumbuh Kembang Anak, MMDST, Standar Antropometri*

**Undergraduate Program in Informatics Engineering
Faculty of Engineering and Computer Sciences
University of Muhammadiyah Pekajangan Pekalongan**

ABSTRACT

Reza Edi Saputra¹, Aslam Fatkhudin², Imam Rosyadi³

SISTEM PAKAR SI-GOCHILD UNTUK SKRINING TUMBUH KEMBANG ANAK MENGGUNAKAN METODE MMDST DAN STANDAR ANTROPOMETRI DENGAN PENALARAN FORWARD CHAINING

The early childhood period (golden age) is a critical phase that determines human quality; however, growth and development monitoring in Indonesia, particularly in daycares, remains hindered by manual methods that are highly susceptible to human error and subjectivity. Furthermore, the majority of existing digital systems focus solely on stunting without integrating developmental aspects. This study aims to design a website-based expert system named “SI-GoChild” that comprehensively integrates growth and development screening.

Utilizing the Research and Development (R&D) method with a Waterfall model, the system was developed using the Laravel framework and a MySQL database. Its reasoning logic employs the Forward Chaining method, utilizing rules sourced from the Anthropometry Standards of the Indonesian Ministry of Health Regulation (Permenkes) No. 2 of 2020 for nutritional status, alongside the Metro Manila Developmental Screening Test (MMDST) for motor and language development. The result of this research is the deployment of an application featuring specialized interfaces for Admins, Teachers, and Parents. Based on domain expert validation across 34 test cases, the system achieved 100% diagnostic accuracy. Additionally, technical feasibility testing demonstrated an average score above 4.5, categorizing it as “Highly Feasible”. In conclusion, “SI-GoChild” effectively addresses the shortcomings of manual recording, enhances daycare operational efficiency, and facilitates parents in monitoring their children's growth and development charts accurately and in real-time.

Keywords: *Expert System, Forward Chaining, Child Growth and Development, MMDST, Anthropometry Standards*