

Conference Name: 2026 EdTec – International Conference on Education & Learning Technology, 13-14 September, Rome
Conference Dates: 13-Sep- 2026 to 14-Sep- 2026
Conference Venue: Courtyard by Marriott Rome Central Park, Via Moscati 7 •00168 Rome • Italy
Appears in: PUPIL: International Journal of Teaching, Education and Learning (ISSN 2457-0648)
Publication year: 2026

Ozyeter et al., 2026

Volume 2026, pp. 321-323

DOI- <https://doi.org/10.20319/ictel.2026.321323>

This paper can be cited as: Ozyeter, N.T., Kara, G.E., Unluer, E. & Durdu, L. (2026). Digital Data Citizenship: Empowering Preschoolers' Agency through Tablet-Based Risky Play Assessment. 2026 EdTec – International Conference on Education & Learning Technology, 13-14 September, Rome. Proceedings of Teaching & Education Research Association (TERA), 2026, 321-323

DIGITAL DATA CITIZENSHIP: EMPOWERING PRESCHOOLERS' AGENCY THROUGH TABLET-BASED RISKY PLAY ASSESSMENT

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Abstract

Research Aims

This study examines child-centered digital design as a tool for active digital citizenship. The psychometric properties of the digitized Willingness to Risk in Play Scale–Pictorial (d-WRiPS-P) were evaluated, exploring how its private, self-administered platform fosters

autonomy and bypasses adult-biased risk aversion in the assessment of preschoolers' risky-play tendencies.

Relationship to Previous Research Works

Traditional risky-play assessments rely heavily on adult observation or adult-mediated administration, which is vulnerable to overestimation bias and social-desirability pressure, and which produces documentation that is "about" rather than "by" children. This study addresses that gap by digitizing the paper-and-pencil WRiPS-P into a tablet-based, audio-narrated, self-paced instrument, repositioning digital tools as sites of participatory pedagogy rather than adult-controlled measurement.

Theoretical and Conceptual Framework

Grounded in the Sociology of Childhood, Gibson's (1979) theory of Affordances, and Critical Constructivism (Nolan et al., 2022; Wilson et al., 2024), the concept of "Digital Data Citizenship" is introduced, defining the child's right to own and represent their own data. Within the interface, the child's capacity to listen, choose, and confirm independently — free of adult observation or intervention — is treated as a relative, technically enforced form of agency, and choice within the digital interface is viewed as a foundational democratic experience.

Paradigm, Methodology and Methods

*Using a quantitative paradigm, the 15-item, three-factor WRiPS-P (Physical Activity, Speed & Dangerous Tools, Disappearing/Distancing) was digitized for tablets with introductory verbal instructions and synchronized audio narration for each item. To ensure navigational competency, a brief familiarization/demo task was completed before scoring began. This tap-only, "Next"-button design facilitated independent navigation regardless of literacy level, with the adult present only for technical support and unable to see or influence the child's responses. To date, **N = 198** Turkish children aged 5–6 (51.5% girls, 48.5% boys) have been involved, recruited through convenience and maximum-variation sampling across 8 schools in Kocaeli province spanning lower-, middle-, and upper-middle SES neighbourhoods. A demographic form and a maternal-report Temperament Scale (Activity Level, Reactivity) were also administered, and a subsample of 35 children additionally completed the paper-and-pencil WRiPS-P at least four weeks apart for convergent-validity comparison. To maximize agency and minimize social-desirability bias, the pace and completion of the assessment were independently controlled by the children.*

Ethical Considerations

Ethical approval and informed consent were obtained. Beyond confidentiality, children's data

ownership was prioritized. Their right to free expression was supported through ongoing verbal assent, with the interface designed so that no adult could see, influence, or intervene in a child's responses in real time.

Main Finding or Discussion

The tablet-based d-WRiPS-P is psychometrically valid: confirmatory factor analysis confirmed the three-factor structure with excellent model fit (CFI = .972, TLI = .966, RMSEA = .049, SRMR = .054), and internal consistency (ordinal omega) ranged from acceptable to excellent across subscales ($\omega = .67-.85$; total scale $\omega = .90$). Measurement invariance was supported through the scalar level across gender and at the strict level across temperament groups (activity, reactivity). Convergent validity with the paper form was strong ($r = .92$), though tablet scores were systematically higher than paper scores ($d = .71$) — a difference not attributable to practice effects, and more plausibly linked to reduced social-desirability pressure and the digital agency afforded by unsupervised administration. Preliminary results indicate the child-led, tablet-based format effectively captures diverse risk-taking profiles.

Implications, Practice or Policy

This model amplifies the "child's voice" in policy-making, advocating for child-led digital documentation and data-driven policies that prioritize children's rights and agency — particularly in restricted urban environments where opportunities for risky play are already limited. The standardized, scalable design offers educators and policymakers a tool for gathering less-biased, child-owned data to inform "as safe as necessary" rather than "as safe as possible" approaches to play environments.

Keywords:

Risky Play, Digital Data Citizenship, Children's Agency, Digital Assessment, Child-Centered Design