



Erikson Institute

THE EARLY DEVELOPMENT INSTRUMENT



Illinois Early Development Instrument (EDI) Pilot Project

Frequently Asked Questions

What is the difference between the EDI and the KIDS (Kindergarten Individual Development Survey)?

While the Early Development Instrument and the Kindergarten Individual Developmental Survey (KIDS) do share a focus on kindergarten children's holistic development, and both are observational instruments, their ultimate intents are different but complementary. The KIDS is for teachers and making instructional decisions. The EDI is for community stakeholders (including representatives from schools) to examine patterns of young children's well-being across a community to make community-level decisions about services, resource allocation, and any needed policy changes.

How can the EDI be beneficial to both the community and the schools?

The EDI's purpose is to provide a picture of all kindergarten-aged children's development and well-being at the neighborhood and community levels. These data can be used to support both community initiatives and public schools' family and community engagement efforts. The EDI emerged from a need for a comprehensive measure of "school readiness" (defined by the developers as readiness for first grade) to be used for considering children's development in relation to the realities in which they live. While any data obtained with more common, direct developmental assessments can be aggregated at the community level, practical considerations highlight the benefit of a relatively brief-to-complete, comprehensive population measure that is typically used triennially. These practical considerations also include the limited comprehensiveness of many direct child assessments in wide use (e.g., a narrow focus on language, literacy, math, or cognition); the costs involved with many direct, comprehensive developmental assessments (including the time involved in administering them); and the complications of obtaining large enough samples of children to be useful.



How was the EDI developed?

The EDI was developed by Magdalena Janus and David Offord from the Offord Centre for Child Studies at McMaster University following common psychometric practices. The pilot instrument's items were largely drawn from the *Canadian National Longitudinal Study of Children and Youth*, which in turn drew items from existing standardized measures in use internationally. These selections were done in consultation with developmental experts. Additional questions were added and piloted with teachers. This draft next underwent an expert panel review involving educators, early childhood educators, and researchers. After modifications were made based upon this review, it was further examined in four focus groups with kindergarten teachers, which resulted in further modifications. This pilot instrument was then implemented in several studies, first in six sites across Canada (urban, rural, and across economic strata) involving 16,583 children. The second study occurred in ten urban schools in two different communities involved examining the EDI in relation to the *Peabody Picture Vocabulary Test* and parents' ratings of questions related to the EDI domains.

Is the EDI reliable and valid?

The EDI has been found to be reliable and valid for its intended purposes – to examine patterns of children's development and well-being at the community level. It was neither developed nor validated for use as an individual developmental assessment.¹ It is important to understand that establishing *reliability* (relatively consistent results) and *validity* (measuring what is intended) is a highly complex process involving examination of various aspects of these two ideas such as:

- *factor analyses* (examining if the questions actually relate to their intended constructs [central concept], such as social competence): internal consistency was found to be high (correlation coefficients: .84-.96)²
- *test-retest reliability* (similar results when completed for the same children at different times, .82-.94)

¹ Janus, M., & Offord, D.R. (2007). Development and psychometric properties of the Early Development Instrument (EDI): A measure of children's school readiness. *Canadian Journal of Behavioral Science*, 39(1), 1-22.; Janus, M. et al. (2007). *The Early Development Instrument: A population-based measure for communities, a handbook on development, properties, and use*. Toronto, CAN: Offord Centre for Child Studies.

² Janus & Offord, 2007; Note low correlation coefficients are generally accepted to be < .5; moderate between .5-.7; and large > .7-1.



- *concurrent instrument validity* (looking at the relationships with existing instruments that measure the same constructs and those that measure different ones, for example questions about language should correlate well with established measures of language, but emotional maturity questions should not correlate strongly with those language measures); The correlations were found to be moderate with multiple measures.
 - *FirstSTEP Screening Test for Evaluating Preschoolers*(comprehensive): social competence (.65), emotional maturity (.73), and language/cognitive development (.58)
 - *Peabody Picture Vocabulary Test* (hearing and understanding English vocabulary): communications (.57)
 - *Who AM I* (non-verbal language): language/cognitive (.46)
- *raters' reliability* (variability of ratings within a group, for example teachers' ratings of their classes)
- *inter-rater reliability* (consistency of ratings across people who complete the rating scale)

For a full description of the procedures used by the developers, and their findings, please see “Development and Psychometric Properties of the Early Development Instrument” by Magdalena Janus and David R. Offord, published in the *Canadian Journal of Behavioral Science* (see footnote 1 for the full reference).

Another dimension of validity is *predictive*, that is the ability of a measure to predict later performance or behavior. In large-scale studies, the EDI scores have been shown to be related to later school performance, that is, children whose EDI scores suggested that they were on track developmentally in kindergarten were much more likely to be meeting expectations in subsequent grades. Conversely, children whose EDI scores were in the vulnerable and at-risk categories were less likely to be meeting developmental and academic expectations, with the chance of experiencing serious challenges increasing when children exhibited vulnerabilities in multiple areas.³

³ Calman, M.A., & Crawford, P.J. (2013). *Starting early: Teaching learning and assessment*. Toronto, CAN: Education Quality and Accountability Office.; D'Angiulli, A., Warburton, W., Sahintin, S., & Hertzman, C. (2009). Population-level associations between preschool vulnerability and grade-four basic skills, *PLoS ONE*, 4(11): e7692.; Duncan, R., Duncan, G., Stanley, L., Aguilar, E., & Halfon, N. (2017). Orange County Early Development Instrument predictive validity study: Do scores from the EDI predict third grade achievement? Irvine, CA: University of California, Irvine, Children & Families Commission of Orange County, & UCLA Center for Healthier Children, Families and Communities.; Forget-Dubois, N., Lemelin, J., Boivin, M., Dionne, G., Séguin, Vitaro, F., & Tremblay, R.E. (2007). Predicting early school achievement with the EDI: A longitudinal population-based study. *Early Education and Development*, 18(3), 405-426.



How can an instrument developed in Canada apply to the United States?

The EDI is based upon widely held assumptions that there are aspects of child development and “school readiness” that transcend national boundaries and cultural groups. Acknowledging that these assumptions have been rightly critiqued as being based upon what has come to be known as the “WEIRD problem” (i.e., based upon cultural assumptions and research conducted largely with samples drawn from white, educated, industrialized, rich, and democratic populations)⁴, the EDI has been used in national contexts as varied as Australia, Chile, Egypt, Jamaica, Kenya, Mozambique, and Mexico, to name a few. In the United States, the Center for Healthier Children, Families, and Communities at UCLA has been gathering data with the EDI for nearly a decade in over fifty-five communities across the country and has found the patterns in the U.S. sample to be very similar to the Canadian samples.⁵

How does the EDI account for cultural bias in the instrument?

This is a serious issue to consider for any normative or criterion referenced instrument. The EDI, like the vast majority of developmental and educational instruments in use, was developed based upon Euro-American assumptions about child development and school readiness. In recognition of this, the EDI’s developers anchor the use of the scale in what is called a “social constructivist” perspective. In essence this means that data obtained with the EDI must be contextualized within local realities, as it is only one dataset among many (including community-members’ first-hand knowledge of community conditions) that need to be considered when determining whether children, in general, are ready for schools – and if these schools are ready for them.⁶

What about teacher biases?

The topic of teacher bias is a common concern raised about the EDI. While further study on the topic of teacher bias is necessary, specifically with regard to the United States population, current research suggests that teacher bias is not a significant threat to the EDI’s validity. The EDI developers arrived at this conclusion by examining its use with different groups of children in different cultural contexts: boys and girls; ESL Students and non-ESL Students; and students that held Aboriginal or non-Aboriginal status. After conducting complex statistical analyses, they concluded 1) that the teachers’ ratings were not

⁴ Henrich, J., Heine, S.J., & Norenzayan, A. (2010). The weirdest people in the world? *Behavioral and Brain Sciences*, 33, 61-135.; Iorio, J.M., & Parnell, W. (Eds.)(2015). *Rethinking readiness in early childhood education*. New York: Palgrave Macmillan.

⁵ UCLA Center for Healthier Children, Families and Communities. (2016). *Reference guide for the Early Development Instrument community profile, school year 2016-2017*. Los Angeles, CA: Author.

⁶ Janus, M., & Offord, D.R. (2007). Development and psychometric properties of the Early Development Instrument (EDI): A measure of children’s school readiness. *Canadian Journal of Behavioral Science*, 39(1), 1-22.



likely biased by perceptions of children’s demographic differences and 2) that observed differences likely resulted from actual developmental differences between children.⁷

In practice, the potential influence of implicit biases on teachers’ ratings is taken very seriously. During both training on completing the EDI and during data collection itself, the teachers receive detailed instructions filling out the instrument, including cultural considerations. For example, the questions “Does this child arrive hungry to school?” and “Does this child arrive over or under-dressed for school-related activities?” are accompanied by the guidance, “ Appropriate religious and cultural attire should not be considered over or under dressed, and a child’s religious or cultural practices such as Ramadan or Lent, should not be counted as arriving hungry.”

⁷ Guhn, M., Gadermann, A., & Zumbo, B. (2007). Does the EDI measure school readiness in the same way across different groups of children? *Early Childhood Education Journal* 18(3): 453-472.; Janus, M., & E. Duku (2007). The school entry gap: Socioeconomic, family, and health factors associated with children’s school readiness to learn. *Early Education and Development* 18(3): 375-403.