

# BUROS

CENTER FOR TESTING

## TEST REVIEWS

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Gesell Early Screener

## **Gesell Early Screener**

### **Purpose**

Designed as a brief developmental screening instrument to "identify children who may have a learning problem or condition that could affect his or her potential to learn."

### **Population**

Ages 3-6.

### **Publication Dates**

2011-2012.

### **Acronym**

GES.

### **Scores**

14 scores in 4 strands: Cognitive Strand (Cubes, Copy Forms, Prepositions, One-to-One Correspondence, Conservation, Identifying Numbers), Language Strand (Interview), Motor Strand (Tiptoe, Balance on One Foot, Hop on One Foot Forward, Skip, Catch, Throw), Social/Emotional/Adaptive.

### **Administration**

Individual.

### **Price Data, 2013**

\$247.15 per English version complete kit including 30 child recording forms, 30 parent/guardian questionnaires, 30 teacher questionnaires, Copy Form cards, Numbers cards, 10 hardwood cubes, beanbag, tote bag, examiner's manual (2011, 78 pages); \$252.30 per Spanish version complete kit; \$36 per 30 child recording forms; \$82.35 per examiner's manual; price data for technical report (2012, 104 pages) available from publisher.

### **Foreign Language Edition**

Spanish edition includes Spanish instead of English parent/guardian questionnaires (all other materials are in English).

### **Time**

(15-20) minutes.

### **Author**

Gesell Institute of Child Development.

### **Publisher**

Gesell Institute of Child Development.

***Review of the Gesell Early Screener by JOSEPH C. KUSH, Associate Professor and Director of the Doctoral Program in Instructional Technology and Educational Leadership, Duquesne University, Pittsburgh, PA:***

**DESCRIPTION**

Arnold Gesell, Ph.D., M.D. studied child development throughout his career. He helped establish the clinic now known as the Yale Child Study Center as well as the Gesell Institute of Child Development, and he developed the Gesell Schedules and the Gesell Developmental Observation (GDO). Originally published in 1925, the GDO has been widely used to assess infant and child development, and was updated in 1940, 1965, and 1979. The most recent update occurred in 2011 with the publication of the Gesell Developmental Observation–Revised (GDO-R; 19:75), an instrument suitable for children between the ages of 2.5 and 9 years. Using questions from the GDO-R, and adding Parent/Guardian and Teacher Questionnaires, the Gesell Early Screener (GES) was created as a screening device, designed to assess quickly the developmental levels of children between 3 and 6 years of age. The instrument evaluates four domains of a child’s development: Cognitive, Language, Motor, and Social/Emotional/Adaptive Skills. The measure can be administered by professionals and paraprofessionals and consists of an examiner’s manual, a Child Recording Form (CRF-S) that includes a standardized script and Summary Profile form, a set of manipulative objects, Teacher and Parent/Guardian Questionnaires, and an autocalculating version of the GES Scoring Worksheet. As a brief screening device, the GES can be completed in approximately 15 minutes with an additional 5 minutes to complete the Summary Profile Form.

The Gesell Early Screener (GES) complete kit includes all the necessary materials for administering the GES to children ages 3 to 6. An alternative Spanish version contains a Spanish-language Parent/Guardian Questionnaire.

**DEVELOPMENT**

The GES serves as a screening device designed to quickly measure the developmental level of a child and identify children who are at risk for developmental delays. The GES was published in 2011 and uses selected developmental tasks derived from the GDO-R. The GDO-R is a more detailed instrument

that also evaluates child development and is used to determine a Developmental Age and assist with the development of classroom curricula.

The GES was developed by selecting specific tasks from the GDO-R with the goal of identifying a child's three-level Performance Level Rating (Age Appropriate, Emerging, or Concern) in each of the four domains (Cognitive, Language, Motor, and Social/Emotional/Adaptive) in 15 minutes or less. Tasks were selected such that the GES would be easy to administer, objective to score, reliable and valid when administered by individuals with varying levels of experience and ability, and meet all federal mandates for screening young children.

The GES is used to quickly record direct observations of behaviors in four domains of development, and scores are compared with rubrics of expected performance levels of typically developing age-matched peers. Identified children may then be referred for more in-depth psychoeducational evaluations.

The Gesell Early Screener measures cognitive capacities such as short-term memory, numeracy, planning, and organization of thoughts; language abilities such as expressing thoughts and needs, understanding conversational exchanges, and understanding the use of words in their appropriate context; motor planning for small and large muscle groups including gait, balance, and coordination; and social, emotional, and adaptive functioning with adults and peers, as reported by parents and teachers. Qualitative rubrics are provided for each of the four strands and allow the examiner to choose one of three summary conclusions for each strand: Age Appropriate, Emerging, or Concern.

The four GES strands include: The Cognitive strand measures visual-motor perception and coordination, and short-term visual memory. It also assesses a child's exposure to and proficiency with numbers via one-to-one correspondence. The Language/Comprehension strand evaluates a child's attention span, articulation, and expressive and receptive language. The Motor strand evaluates a child's fine and gross motor skills. The Social/Emotional/Adaptive strands (Teacher and Parent/Guardian Questionnaires) provide information to evaluate the quality of a child's interactions with peers and adults, emotional regulation behaviors, and self-help skills both at home and at school.

The complete GES kit includes six components: (a) The GES Child Recording Form (CRF-S) contains the information necessary for the examiner to record the child's responses to all screening tasks. (b) The GES Summary Profile Form provides a summary of a child's scores and is designed to facilitate communication between parents and teachers. (c) The GES Strand Scoring Worksheet (GES-SSW) assists with strand or summary scoring. (d) The Teacher Questionnaire (TQ) allows the teacher to record social, emotional, and adaptive behavior observed in the classroom. (e) The Parent/Guardian Questionnaire (PQ) is similar to the TQ and records parent descriptions of early health history, and social, emotional, and adaptive behaviors that are exhibited in the home. (f) The GES examiner's

manual contains information about the rationale, purpose, and development of the GES and provides specific information about the administration, scoring, and interpretation of all GES tasks. GES manipulative materials include 10 one-inch red cubes, a beanbag, a small jar with pellets, task cards, and a number card.

A number of specific tasks are measured by the GES.

The set of tasks comprising Cubes provides information about horizontal and visual perception, fine motor coordination, attention span, premathematical skills, short-term and visual memory, and spatial judgment. The Interview questions assess a child's speech and language skills, as well as the ability to recall everyday experiences. Responses provide an overview of the child's cognitive organizational skills, ability to stay on task, and ability to follow directions. The set of tasks comprising Copy Forms examines a child's competence in integrating visual information with motor abilities, visual tracking skills, and discrimination abilities. Specifically assessed skills include handwriting, reading comprehension, and ability to recognize and recall letters and numbers. The Prepositions task assesses the child's understanding of spatial position of an object and his or her ability to apply that knowledge to a corresponding object. The Identifying Numbers task requires the child to identify random numerals 1–12 by name. The Numeracy task consists of two measures: One-to-One Correspondence and Conservation. The child is asked to count a set of four items, using one-to-one correspondence, and then to tell how many there are in the set altogether. Fine and Gross Motor Skills are observed through the Cubes and Copy Forms task as well as pencil grasp (Fine Motor) and by items related to large motor skills, such as balance, gait, and coordination as the child walks on tiptoe; balances on one foot, hops, skips, throws, and catches (Gross Motor). Social Behavior, Emotional Development, and Adaptive Skills assess a child's interactions with peers and adults, ability to self-regulate, and self-help skills.

## TECHNICAL

Norms for the GDO-R were developed as part of a nationwide study in 2008–2010 that collected technical data for children 3–6 years of age on all 20 GDO-R tasks, as well as Overt Behavior and Social/Emotional/Adaptive measures. Data were collected from 53 schools across 23 states and included a total of 1,287 children between the ages of 3 and 6 years. Attempts were made to include children representative of diverse ethnic, geographic, and SES backgrounds. Data were collected by 101 trained examiners with a mean of 12 years of teaching experience. Public schools provided 55% of the normative data with the remaining 45% coming from private schools.

With regard to reliability, the GES technical manual provides correlation coefficients for each of the tasks within a strand as well as the correlation of tasks between strands. As would be expected for diverse cognitive tasks given to young children, the correlations are relatively low, yet still adequate for a scale

of this type. For example, for the young 3-year-old group, the fine-motor task of stacking cubes shows a modest correlation (.37) with the verbal Prepositions task that assesses language comprehension. Correlation coefficients between the individual tasks and the corresponding strand totals are, as expected, much higher, and again quite adequate. Additionally, interrater reliability coefficients are reported, evidencing extremely high values; however, the number of cases reported in the technical manual was very small and the results should be seen as preliminary. The complete GDO-R Technical Report and the complete GES Technical Report are both available online on the publisher's website (<http://www.gesellinstitute.org/technical-reports>).

## COMMENTARY

The GES is a well-crafted instrument, designed to assist in the screening and early identification of developmental delays. Because its sole purpose is that of a screening instrument, it cannot be used for diagnostic purposes, a characteristic clearly pointed out in the examiner's manual.

The GES examiner's manual includes a well-written section describing the methods for administering and scoring the instrument as well as information on preparing for the administration of the instrument including suggestions for establishing rapport with the child, and preparing to interview the parents and teachers and complete the corresponding questionnaires. Additional training is also available from the publisher.

As with any criterion-referenced measure of early childhood development, the content may or may not match the behaviors deemed important by the school or agency, and a careful examination of the four strands should be undertaken before administration. There may be instances where an "in-house" compilation of desired behaviors is deemed a better alternative, for example, in a case where a school district is attempting to identify young children for early admission to a kindergarten program. In this instance the district could identify specific behaviors deemed necessary for their unique curriculum (e.g., can the child use scissors, is the child fully toilet-trained, does the child know all his or her primary colors, can the child count to 35?), and could subsequently develop a cutscore; for example, the child could be admitted early if they demonstrated 20 of the 25 identified behaviors.

Program placement, however, is not one of the intended uses of the GES and should not be seen as a limitation. Rather, as stated in the technical manual, "The GES is designed to be used with large numbers of children to identify any child who may benefit from further in-depth evaluation. It provides an estimate of a child's performance in four domains, but does not provide a developmental age or inform instruction" (p. 69).

The GES examiner's manual explicitly states that the instrument (as well as all screening instruments) is

not a readiness test or an IQ test and should not be used to diagnose or label a child. Additionally, the test manual states that the GES should never be used as the sole determinant of a child's placement in school, and that multiple assessments, including parent observations, teacher observations, medical history, and a portfolio of a child's work should always be utilized. Similarly, and as indicated in the examiner's manual, the GES must be combined with other sources of psychoeducational assessment data when making diagnostic decisions. However, Developmental Ratings of "Concern" on any of the strands of the GES may signal an area to monitor for periodic rescreening or for referral for specialized evaluation.

## SUMMARY

The four domains/strands assessed by the GES have great intuitive appeal (face validity), and the individual tasks provide raw scores and summary statistics across 6-month intervals for each of the 3 years covered by the scale. Again, because of the screening nature of the instrument, no developmental ages are provided. However, users can compare individual scores to the average scores reported in the technical manual and also can easily determine the three-level summary conclusion: Age Appropriate, Emerging, or Concern. When these data are combined with additional information provided by the child's teacher and parents, the GES provides a solid alternative to the more detailed, but time-intensive Gesell Developmental Observation–Revised (GDO-R; 19:75).

### Cite this review

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## REVIEW 2 OF 2

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***Review of the Gesell Early Screener by JEAN N. CLARK, Associate Professor of Educational Psychology, University of South Alabama, Mobile, AL:***

## DESCRIPTION

The Gesell Early Screener (GES) is individually administered to children ages 3–6, for the purpose of screening for signs of potential difficulties in learning. Using eight measures from the longer and more comprehensive Gesell Developmental Observation–Revised (GDO-R; 19:75), the screening tool is

composed of tasks and interview items administered in about 15 minutes, along with Teacher and Parent/Guardian Questionnaires. The assessment has eight tasks, which are subsumed into four categories or "strands": Cognitive, Language, Motor, and Social/Emotional/Adaptive.

There is a recording form that includes examiner observation of reported ethnicity, weight, distinguishing physical features, and expressive language indicators including speech patterns, native language, and English fluency. This section is followed by an interview protocol used to assess language abilities, with two questions asking the child about self, and three questions about home. Subsequent sections contain tasks in the four strands: Cognitive tasks include building with cubes, copying forms, demonstrating prepositions, one-to-one correspondence in counting pennies, and number identification; Language assessment includes observations of speech patterns and fluency during the five-item interview; Gross Motor assessment includes walking on tiptoe, standing on one foot, hopping, skipping, and throwing/catching a beanbag; and Fine Motor development is assessed by a categorical observation checklist including handedness and pencil grasp.

The 45-item teacher rating scale consists of a 5-point Likert-type scale, plus one open-ended probe; sections include Social/Emotional Development, Classroom Activities, and Self-Expression, Adaptive Abilities. An 80-item parent/guardian checklist elicits information about Family Background, Medical/Educational History, Home Environment, Adaptive and Academic Skills, and Social/Emotional Development. There is a summary profile for recording observation and feedback data, where scores are translated into Performance Level Rating categories of Age Appropriate, Emerging, or Concern.

## DEVELOPMENT

The parent instrument of the GES is the Gesell Developmental Observation (GDO), with technical data dating back to 1979. This instrument was most recently revised based on data collected from 2008–2010, and the revised instrument (GDO-R; 19:75) was published in 2011 and is also reviewed in this Yearbook. The data were collected by teachers in public (55%) and private (45%) schools, who had a mean of 12 years of teaching experience and a mean of 7 years experience in using the GDO. In addition, there was a required refresher training with intensity and length based on recency of prior training. Based on the perceived need of a short screening tool to meet federal mandates of Headstart, No Child Left Behind (NCLB), and the Individuals with Disabilities Education Act (IDEA, 1990, 1997), six performance tasks and an interview from the original GDO were modified to fit the screening time of 20 minutes. Questionnaires for teacher (TQ) and parent/guardian (PQ) were added to both the GDO-R and the GES. Both questionnaires elicit feedback in rating social, emotional, and adaptive levels. The PQ elicits demographic and personal history, and the TQ provides observation of language development. One item ("seems shy") was eliminated from the original TQ because there was no clear determination of whether this was a positive or negative attribute. Standing Long Jump and Jump in



Place tasks were eliminated because of measurement and validity issues. Six performance tasks from the GDO were retained in the GSE. In summary, the GES includes four domains or strands: Cognitive, Language, Motor, and Emotional/Social/Adaptive. The cognitive domain is assessed by six performance tasks (building with cubes, copying forms, demonstrating prepositions, identifying numbers, one-to-one correspondence, and conservation using pennies); gross motor level is assessed by six activities (walking on tiptoe, standing on one foot, hopping on one foot, skipping, beanbag throw, and beanbag catch); Emotional/Social/Adaptive level is assessed in the TQ and PQ, and Language is assessed by recording observations during a 5-item interview. Based on scoring rubrics and developmental definitions from experts, outcomes are reported by Performance Level Ratings in each strand. Development of cut scores for the performance categories of Age Appropriate, Emerging, Concern, or blended (e.g., Emerging/Concern), consisted of GDO data, expert opinion, and current developmental theory literature.

## TECHNICAL

The age range of the standardization sample was 2 years 9 months to 6 years 3 months, given that the instrument is used to assess children ages 3–6. Using the same sample of 1,287 children from the GDO study, the current instrument (GES) was developed. The sample included participants in 23 states, and encompassed all regions of the contiguous United States. Eligibility for free or reduced lunch (28.2%) was used as a proxy for low socioeconomic status (SES). The ethnicity of the total sample approximated the U.S. Census: 14.8% African American, 60.7% Caucasian, 15.3% Hispanic, 4.5% Asian American, 2.9% American Indian, and 1.8% other. Data were analyzed in 6-month age bands (e.g., age "3" = 2 years, 9 months to 3 years, 2 months, 29 days). The test authors purport that content validity evidence for the instrument was established by reviewing child development theory, and that the test authors "met with education experts" (Technical Report, p. 18). However, no record of the process was described. To assess reliability, a subsample of 10 children per age strand from the GDO sample were examined, and Pearson product moment correlations were used for two raters in assessing six tasks in the Cognitive strand of the GES. One rater was a graduate intern at the Gesell Institute who "independently scored selected GES items from the original GDO Child Recording Form completed by the GDO examiner" (Technical Report, p. 78). Coefficients ranged from .89 (one-to-one correspondence using pennies) to 1.00 (copying circles, using the prepositions "on," "under," and "beside," and number identification). These coefficients are reported on the total set of sample scores ( $n = 60$ ), but are not broken down by age strands. Using alpha coefficients, the internal consistency of four tasks in the Cognitive strand were estimated and ranged from .39 to .71 with  $p$ -values (item difficulty) ranging from .25 to .42. Finally, for the Cognitive strand, descriptive data were used to report what percent of children in each age band were assessed at each performance (Age Appropriate = 50–55% over the 7 age bands; Emerging = 24.3–29.6%; Concern = 15.7–23.1%). The cutoff scores for these performance levels were set independently

by two researchers and then reviewed by the team. No statistical analyses of these ratings, or their review process, were presented. No analyses of the PQ or the TQ were presented.

## COMMENTARY

The examiner's manual has clear and concise training tips and literature review, a sample letter to notify parents/guardians about the assessment, and careful summaries of the components of the assessment kit. One potential concern is that the manual directs administrators to record children's interview responses verbatim, to record patterns of fluency, sentence construction, grammatical errors, and other language indicators; however, the manual also states that many children may speak too quickly for such literal transposition and there is no alternative (such as audio recording) suggested. Although the manual describes the importance of the Teacher Questionnaire (TQ) in assessing language development, there were no reported analyses, such as interrater reliability, to demonstrate strength of the tool in the assessment paradigm. Likewise, the Parent/Guardian Questionnaire (PQ) provides demographic information that is critical in conducting instrument validation analyses; however, many parents/guardians did not complete the form. In balance, the absence of many PQs was explained and addressed, with focus on student well-being over data collection. However, because both of these instruments were added to the GDO-R and the GES as new components, some type of analysis or feedback would be important in considering its generalizability, use, and application. A second general area of concern is that, although there are several descriptive sets of data related to facets of the GDO, analyses of the screening instrument at hand consisted of the three data sets described earlier. Additionally, the interrater reliability described one rater who scored items completed by another rater, rather than two raters actually completing same-sample observations. Thus, the reliability assessment was not based on two independent observations, but on two people independently scoring one set of observations. A final concern relates to the sample diversity. Although the overall sample ethnicity distribution paralleled that of the U.S. Census, this approximation did not hold with all age bands. Thus, the application may be less generalizable and those assessing some minority groups are advised to consult the Technical Report to see if certain children are fairly represented.

## SUMMARY

As a screening tool, administration of the GES is quick and easy, requiring no special training for completion. Scoring and interpretation guidelines are available in the examiner's manual, to be used by persons with varying degrees of expertise. The instrument meets early childhood assessment standards for both the Individuals with Disabilities Education Act (IDEA, 1990, 1997) and Head Start. Used as intended, the instrument gleans enough information about the comparative developmental level of the child to substantiate the performance level indicators (Age Appropriate, Emerging, Concern). As the

examiner's manual points out, the more extended version (GDO-R) is an alternative for cases in which there are areas of concern or questions that merit closer evaluation.

### **Cite this review**

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