



## Methods for Collecting Data in Child Development

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### Abstract:

*Child development refers to the biological and psychological and emotional changes that occur in human beings between birth and the end of adolescence, as the individual progresses from dependency to increasing autonomy. Because these developmental changes may be strongly influenced by genetic factors and events during prenatal life, genetics and prenatal development are usually included as part of the study of child development. Related terms include developmental psychology, referring to development throughout the lifespan, and pediatrics, the branch of medicine relating to the care of children. Developmental change may occur as a result of genetically-controlled processes known as maturation, or as a result of environmental factors and learning, but most commonly involves an interaction between the two. It may also occur as a result of human nature and our ability to learn from our environment. Human beings have a keen sense to adapt to their surroundings and this is what child development encompasses. Every child would struggle to find their culture and identities in child development. There are various methods for Studying Child Development. They are as follows.*

1. *The Scientific Method*
2. *Contexts for Gathering Data about Children*
3. *Correlation and Causation*
4. *Designs for Examining Development*
5. *Ethical Issues in Child-Development Research*

*There is an important role of the researcher to collecting the data in the researches of psychology. So the researcher must do their important role for the collection of data in this type of study. Here the author discusses about some data collection methods in Child-Development.*

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### 1. Introduction

All scientific knowledge stems from a rigorous, systematic method of research. Through research, theories are modified to reflect new data. How are data about children's development? What types of instruments are used to study children's development? If researches want to study children of different ages, what research designs can they use? To what extent are theories and methods linked?

### 2. Methods for Collecting Data

Whether we are interested in studying attachment in infants, children's cognitive skills or pubertal change in adolescent, we can choose from several ways of collecting data. Here we outline the measures most often used, including their advantages and disadvantages, beginning with observation.

### 3. Observation Method

Scientific observation requires an important set of skills, unless we are trained observers and practice our skills regularly, we might not know what to look for, we might not remember what we saw, we might not realize that what we are looking for is changing from one moment to the next, and we might not communicate our observations effectively.

For observations to be effective, they have to be systematic (2005, Kantowitz, Roediger & Elmes; 2007, Gall, Gall, & Borg). We have to have some idea of what we are looking for. We have to know whom we are observing, when and where we will observe, and how the observations will be made. In what form they will be recorded; in writing? Tape recording video? Where should we make our observations? We have two choices; a laboratory, which is a controlled setting with many of the complex factors of the 'real world' removed, and the everyday world.

Making observations in a laboratory allows us to control certain factors that influence behavior but are not the focus of our inquiry (2005, Kantowitz, Roediger; 1976, Atkinson, Atkinson, and Hilgard). However, laboratory research does have some drawbacks. First, it is almost impossible to conduct research without the participants' knowing they are being studied. Second, the laboratory setting is unnatural and therefore can cause the participants to behave unnaturally. Third, parents and children who are willing and able to come to a university laboratory may not fairly represent the population we are interested in studying. Those who are unfamiliar with university settings and with the idea of 'helping science' may be intimidated by the setting. Finally, some aspects of child development are difficult if not impossible to examine in the laboratory.

Naturalistic observation provides insights that we sometimes cannot achieve in the laboratory (2003, Billiman; 2010, D.B. Shah). Naturalistic observation means observing behavior in real world settings, making no effort to manipulate or control the situation. Child development researchers conduct naturalistic observations at homes, day-care centres, schools, playgrounds, gardens and other places children live in and frequent.

### 4. Standardized Instruments

Other method of data collecting is the standardized instrument, which has uniform procedures for administration and scoring. For example, the Logico-Mathematical device (2011, D. R. Dodia), Mind Games (2009, Bottino, Tavella). Many standardized instruments allow the researchers to compare the performance of one person to other persons.

The main advantage of such instruments is that they provide information about individual differences among people (2004, Gregory; 1976, Garrett). One problem with standardized instruments is that they do not always predict behavior in non test situations. Another problem is that standardized tests are based on the belief that a person's behavior is consistent and stable, yet personality and intelligence testing can vary with the situation.

### 5. Survey and Interview

Sometimes the best and quickest way to get information about people is to ask them for it. One technique is to interview them directly. A related method that is especially useful when information from many people is needed is the survey, sometimes referred to as a questionnaire. A standard set of questions is used to obtain people's self-reported attitudes or beliefs about a particular topic. In a good survey, the questionnaire is clear and unbiased, allowing respondents to answer unambiguously.

Survey and interviews can be used to study a wide range of topics from parenting attitudes to perceptions of friends to whether or not individuals use drugs. Surveys and interviews can be conducted in person, over the telephone or over the internet. Some survey and interview questions are unstructured and open ended, such as ‘tell me about your school life’ or ‘what opinion about your principal is?’ They allow for unique responses from each person surveyed. Other survey and interview questions are more structured (schedules) and specific. For example, ‘which cricket team will win the world cup?’ there are four possibilities, which one possibility is right according to you? In such questions, respondent have to give answer in short or in one word or in a sentence.

## 6. Case Study

A case study is an in depth looks at a single individual. Case studies are performed mainly by mental health professionals when, for either r practical or ethical reasons, the unique aspect of an individual’s life cannot be duplicated and tested in other individuals. A case study provides information about one person’s fears, hopes, fantasies, traumatic experiences, upbringing, family relationships, health or anything that helps the psychologist understand the person’s mind and behavior.

Case histories provide dramatic, in-depth portrayals of people’s lives, but we must be cautious when generalizing from this information. The subject of a case study is unique, with a genetic makeup and personal history that no one elsewhere’s. In addition, case studies involve judgments of unknown reliability.

## 7. Psycho physiological Measures

To collect data about an individual’s biological functioning; Psychophysiological measures may be the most useful method. These measures are used to access the functioning of the central nervous system [CNS], the autonomic nervous system [ANS], and the endocrine system [ES].

The CNS consists of the brain and spinal cord. Both neuroimaging techniques and the electroencephalograph provide information about the brain and its functioning. Neuroimaging techniques include several methods that produce varying types of images of the brain’s structure or its activity or both. Especially useful is magnetic resonance imaging [MRI], which creates magnetic fields around a person and uses radio waves to construct very clear images of the brain’s tissues. A particular type of MRI also provides images of the brain’s biochemical activities.

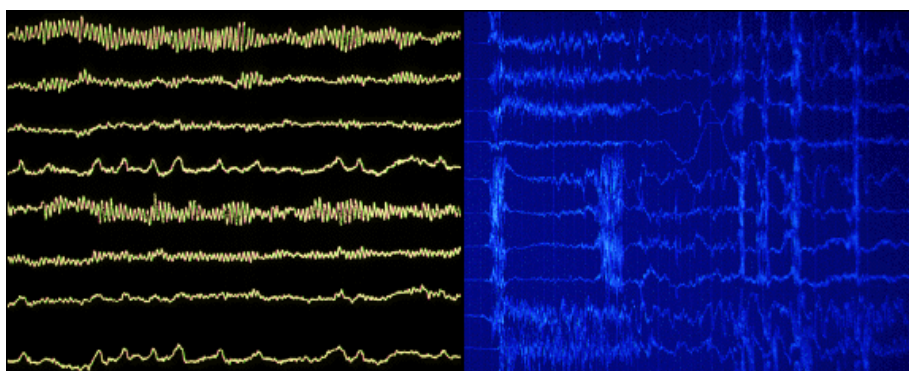


Figure 1  
EEG of Normal and Abnormal Person

The electroencephalograph [EEG] records the brain's electrical activity. Electrodes placed on the scalp detect brain wave activity, which is recorded on a chart known as an electroencephalograph. EEGs have been used to assess the brain's functioning during performance on memory tasks and to measure brain damage.

The ANS takes message from the body's internal organs, monitoring such process as heart rate, breathing and digestion. Heart rate and breathing can be measured even in very young infants and they can give useful indicators of an infant's capacities. For example, heart rate indicates whether an infant is simply starting blankly at a stimulus (heart rate is stable) or is actually attending to processing the stimulus (heart rate shows during periods of concentration).

The ES consists of a set of glands that regulate the activities of certain organs by producing and releasing the chemical products known as hormones into the bloodstream. Measuring hormones concentrations in the blood can provide information about many aspects of a person's emotional and physical status, such as stress levels and pubertal change. For example, the hormone cortisol is secreted in times of stress, such as when an infant is awakened by a loud noise; level of estrogens and androgens change as girls and boys go through youth.

Caution needs to be exercised in interpreting data obtained using psychophysical measures. Many factors determine responses and thus there is never an exact one to one correspondence between a physiological index and a psychological state (2008, J.W. Santrock).

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