The LAS¹

A developmental sequence

The LAS is based on Dr. Kurt Fischer’s² skill scale. The skill scale itself has emerged from almost a century of research into cognitive development by dozens of prominent researchers. The cognitive developmental model posits that students performing at different developmental levels think differently. Dr. Fischer’s model describes these different ways of thinking, and how they progress through tiers and levels.

The figure on the right shows tiers 3 and 4 of the five developmental tiers Fischer describes. These two tiers include the most common verbal levels of childhood and adulthood—levels 6 through 12. As shown in the figure, each new level uses the elements of the previous level in a more complex construction, and the highest level of each tier is also the first level of the next tier. Each new level is said to be more hierarchically complex than the previous level.

Fischer’s elegant model has made it possible to study conceptual development and developmental processes in a wide range of knowledge domains. Of course, the figure on the right is a bare-bones model. To illustrate what thinking looks like at each of these levels, in the table on the following pages I’ve populated each level with ideas. As you look at the figures in this table, note the similarities and differences between levels 6 & 9, 7 & 10, 8 & 11, and 9 & 12.

¹ The author of this report, Theo L. Dawson, Ph.D. (UC Berkeley, 1998), is a respected cognitive developmental psychologist. Her work focuses on the description of learning sequences—the actual pathways through which people learn complex concepts and skills—and the design of developmental assessments of these skills.


<table>
<thead>
<tr>
<th>Level</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>At level 6 (tier 3), children tend to think in terms of one attribute (something one can easily describe in terms of a concrete example) at a time.</td>
<td><img src="image1.png" alt="Image" /></td>
</tr>
<tr>
<td>At level 7 (tier 3), children can link attributes to draw simple conclusions.</td>
<td><img src="image2.png" alt="Image" /></td>
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<tr>
<td>Level</td>
<td>Example</td>
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<tr>
<td>At level 8 (tier 3), children can describe how attributes of several instances are related in a “system.”</td>
<td>A good leader is fun to have because she knows where to go and knows what to do and will show you how</td>
</tr>
<tr>
<td>At level 9 (tier 4), people can coordinate two or more of these “systems” to extract a general quality. Notice how difficult it has become to represent the overarching idea—is good with people—as a set of concrete instances. The child has abstracted a quality from concrete instances, and this opens up radical new possibilities for thought.</td>
<td>A good leader is good with people is fun is helpful is friendly</td>
</tr>
</tbody>
</table>
At level 10 (tier 4), people can relate abstracted qualities to make inferences.

A good leader is

- good with people
- which makes them
- trust her intentions

A good leader is

- in front
- so
- she can show you the way

At level 11 (tier 4), people can relate several of these qualities to describe an abstract system.

A good leader is

- inspiring
- trust-worthy
- competent
- arrogant

A good leader

- is fun to have
- because she
- knows where to go
- knows what to do
- will show you how
At level 12, people can coordinate two or more abstract systems to extract a general principle.

**Example**

A good leader is
- a highly competent servant to her organization
- inspiring
- visionary
- deeply committed

A good leader
- is good with people
- is fun
- is helpful
- is friendly

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**A content-independent developmental assessment system**

Lectical™ analysts focus on the explicit logical structure of arguments (which is easy to see in the above examples) and the implicit logical structure of their conceptual content (which is inferred from the meanings being expressed in an argument).

For an example, consider the arguments shown on the next page. In the first argument, our respondent asserts that a good leader is fun to have, because she knows where to go, what to do, and will show you how to do it. In the second, the respondent asserts that a good leader is inspiring because she is trustworthy and competent without being arrogant. The arguments have the same basic logical structure. They are systems. But, unless you make huge inferences regarding the meanings in the first example, the second is clearly a higher level argument than the first. In any case, based on the sequence shown in the table above, we know that the idea that good leaders are fun is likely to be deeply embedded in the idea that you can trust the intentions of a good leader. Of course, when we are scoring, we don't have a table that tells us which ideas are used to construct other ideas. We figure it out by looking closely at the meanings of the concepts a respondent is using in his or her argument. We always look for the simplest meaning that makes sense, so we don’t accidentally award an inflated score.

In the case of the higher level example, we would examine the meanings of *trustworthy, competent, and arrogant*, asking if they are concepts with meanings that are more than simple attributes we can describe with concrete examples. Our reasoning would go something like this: To find someone trustworthy, one must first have constructed a basic concept of trust, which requires noting that some people tell the truth and some lie, some people keep secrets while others don’t, some people steal and some don’t, etc. Although a basic concept of trust can be defined in terms of several concrete instances, the notion of trustworthy, which is at least one step removed from the notion of trust, would be very hard to represent in this way. Consequently, we must conclude that *trustworthy* is a quality (as we have defined the term). This means that the argument must be at level 11 rather than level 8.

Note: When we score a test performance or an interview, we rarely score single sentences. The responses to our test items are generally a paragraph or more in length. This makes it much easier to figure out a respondent’s intended meaning.
In addition to determining the level of an argument, we use the LAS to determine its phase. We have defined 4 phases per level. These are transitional, unelaborated, elaborated, and highly elaborated. By adding phase scoring to the LAS, we have increased the specificity of our scores, making them more useful to educators and learners.

A good leader is

- inspiring

if she is trust-worthy and arrogant without appearing

and competent

- knowing what to do
- knowing where to go

because she will show you how

is fun to have

A good leader

and

and
The LAS is content independent

When we say that the LAS is *content independent*, we mean that the scoring criteria are the same no matter what kind of a text we are scoring. This is a critical feature of the LAS—one of the things that allows us to call it a *measure*. Consider the ruler. It can be used to measure anything with length, including everything shown below. Similarly, the LAS can be used to measure anything with hierarchical complexity. Note, however, that like the ruler, the LAS measures only one dimension—the developmental dimension defined as *hierarchical complexity*. Like length, this is a useful dimension, but it should never be used to “sum up” a person. That would be as absurd as considering the baby below to be a good baby just because she is 22 inches long.

How we employ the LAS

The LAS can be used in a number of ways. We use it as part of a methodology for describing the sequences through which learners come to understand concepts and master skills. These sequences form the basis for our assessments. Of course, we also use the LAS to score assessments. And we have used it to score books, other written material, and the task demands of jobs. This versatility makes the LAS a powerful tool for studying how people learn and helping them to learn better.

To read about some of our work, click on the “articles” tab at http://devtestservice.com.