



# **The Standard Kaleidoscope Profile®: Development And Validation**

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## Why Develop Another Profile?

Since the 1940s there have been hundreds of learning-style, work-style, aptitude, and vocational profiles available for use in business and the workplace. Many have been excellent. Why, then, are we creating a new one? The experience of both the author, an educator and consultant to hundreds of schools and businesses, and of Performance Learning Systems (PLS), a corporation working with thousands of teachers and professionals nationwide for over 30 years, has given us insights that inspired us to create a profile that is at once more informative and more convenient than any other.

Some of these insights are:

- 1. The typical profile requires a great deal of time to complete.**

In an effort to achieve validity, many commercially available profiles include as many as 200 questions. Finding them prolonged and unwieldy, many companies have had to abandon extensive use of such profiles because the tasks of administering and scoring them were overwhelming, to say nothing of the additional burden of disseminating and then actually using the collected information.

- 2. Most profile questions are based largely on word associations, comparisons, and generalizations.**

Most profile questions pose difficult semantic problems that challenge participants inappropriately. Often questions are too abstract, requiring participants to be expert readers, if not

actual savants. Participants frequently must choose one of two generalized qualities (such as “emotional” and “logical”), while the truth lies somewhere between. Sometimes the apparent meaninglessness of profile tasks actually alienates participants.

- 3. Most profiles use an inappropriately narrow range of words, phrases, and concepts to determine a wide range of learning characteristics.**

Keirsey’s Temperament Inventory, the “Gregorc Style Delineator,” the Dunn, Dunn, and Price “Learning Style Inventory,” Herman’s Brain Dominance Inventory, and other profiles use many questions, word associations, and tasks that are alike (or identical), regardless of whether they are assessing learning styles, temperament styles, or aptitude. For instance, one profile asks participants to decide if they prefer to “arrange dates, parties, etc.,” or to “be free to do whatever looks like fun at the time,” while another asks them to decide if “systematic” or “casual” appeals to them more. Another asks participants to judge on a five-point scale if they agree with the statement, “I need to plan my day on a regular basis.” When these questions are isolated, it is nearly impossible to discern which particular theories, qualities, or styles they target.



## Our Response

PLS decided to create a learning-styles profile that is:

1. Easy to administer and score.
2. Relevant to participants both during and after administration.
3. Convenient to use after results are generated.
4. Informative on many levels.
5. Familiar to anyone with previous learning-style knowledge in the workplace.

While we have availed ourselves of the vast amount of research already conducted on learning styles to build and validate The Kaleidoscope Profile® (using others' theories and even some of their profiles), we have made two very important changes:

1. In order to avoid unwanted associations and syntactic nuances, most profiles use an either/or format and vocabulary that is purposely different from that associated with a particular work environment. The Kaleidoscope Profile®, on the contrary, targets the work environment with environment-specific questions.
2. The Kaleidoscope Profile® validity study showed that participants may reveal several learning-style traits from a single response to a single well-phrased question. Indeed, two or three preferences can be deduced in each of the sensory, organizational, and temperament styles. This innovative approach is based on the work of previous profile designers, who modeled the concept that similar questions can be effectively applied to a variety of learning styles.



## The Kaleidoscope Profile™ Design

The actual format of The Kaleidoscope Profile® – a folder with stickers – began as an idea for a self-esteem survey for school-age children. It proved so attractive, informative, and user-friendly that we realized we had a very successful format for deriving maximal information with minimal effort. We decided to develop it into a true learning-styles profile.

We did our first field-testing on two school-age student groups, one from Grades 3 to 6, the other

from Grades 7 to 12. In all, we ran two extensive field-tests nationwide, profiling over 2,000 students over a two-year period. By the time we finally felt satisfied with our student profile, there was a growing clamor for teachers, parents, and businesses for an adult version. In 1996, using data from our field-tests plus other broadly based research, we began to develop the Standard (adult) version of The Kaleidoscope Profile®.

We discovered that the sticker format provides an opportunity for participants to be more expressive and revealing. Fundamental in the development of the adult version is the concept that certain colors, verbs, and “operative words” attract different learning styles. Providing many possible choices among these variables compels

participants to be very selective (they use only 32 out of 168 possible choices), heightening the validity of the resultant scores. Further, the controlling questions themselves, as well as the answers, have inherent meaning to participants and can be easily recorded for future reference.



## Validity

We carried out our first nationwide field-test with 300 adults from all walks of life. From that pool of 300, we studied 210 in depth. Twenty percent were from minority populations; 30 percent were from the professional sector. Participants were almost evenly divided among urban, suburban, and rural locations.

We quickly found that educators’ scores were statistically consistent, but very different from those of the rest of the adult population. Realizing that this had to do with their unique work environment (working alone with large groups of children), we decided to create two distinct versions of the profile, one exclusively for educators and one for the noneducator adult population – our Standard version. Unlike most profiles that ask hundreds of questions to avoid any influence from environmental conditions, both of our profiles were purposely targeted to work environment. Welcoming such environmental influences, we were able to reduce the number of questions.

In field-testing the adult profiles, we studied four reliability relationships, asking questions in the following areas:

### **Predictive Validity**

We asked all participants who had received the results of their profiles to assess their accuracy. Thus we were able to determine how well the scores predict learning-style characteristics

judging by the participants’ views of their own characteristics.

### **External Consistency with Other Instruments**

We determined how closely participants’ scores from our profile conformed to characteristics found by other learning-styles profiles they had taken. For this consistency check we used paper-and-pencil profiles developed by PLS for the Sensory, Organizational, and Perceptual preferences, and Keirsey’s profiles from his book *Please Understand Me* for the Temperament preferences.

### **External Consistency with the General Population**

Extensive studies have been done on what percentages of the general population have what particular learning style preferences. We compared our population/learning-style percentages to those studies.

### **Internal Consistency**

To check for internal consistency, we are currently re-administering the same profile to 100 adults who participated in the field-test within the past year.

Our intent was to develop a very user-friendly, useful, and reasonably reliable tool. To this end, we were willing to sacrifice some validity for the sake of practicality. (To use an analogy, we were looking for a way to measure heart rate by

pulse, rather than by hooking the patient up to a heart monitor.) Because we were using an environmentally specific context and asking fewer questions, we were prepared to accept a lower correlation coefficient of, say, 0.60 to 0.70 instead of 0.80 or 0.90. The profile was also handicapped by requiring three responses to one

question, which would often identify two style preferences correctly, but not the third. This left us in a quandary; whether or not to jeopardize the proven consistent accuracy of the first two preferences by changing the response to the third. We had to make tough decisions several times during the field-testing.



## Field-Test Results

Following are results in each area of the field-test. In addition to the generated coefficients, the four categories of predictive correlation (in contrast to most profiles, which have only one or two) generate a larger validity base than average, supporting our confidence in the profile's accuracy. The correlation coefficients were generated using Pearson's coefficient formula.

Kinesthetic	0.88	Global	0.89
Tactual	0.91	Sequential	0.84
Auditory	0.86	Intuitive Feeler	0.94
Visual	0.81	Intuitive Thinker	0.81
Abstract	0.72	Sensing Judger	0.80
Concrete	0.87	Sensing Perceiver	0.89

### Predictive Validity

Correlation among profile descriptions and participants' views of themselves in the postsurvey:

Kinesthetic	0.78	Global	0.91
Tactual	0.80	Sequential	0.73
Auditory	0.86	Intuitive Feeler	0.88
Visual	0.88	Intuitive Thinker	0.79
Abstract	0.67	Sensing Judger	0.86
Concrete	0.89	Sensing Perceiver	0.79

### External Consistency with Other Instruments

Correlation among profile scores and scores on other profiles taken by participants:

### External Consistency with the General Population

The first number is the field-test population percentage and the second is the general population. Any total not equaling 100 percent is missing those participants who had equal scores on more than one preference (about 10 percent of the total field-test population).

Kinesthetic	32/35	Global	48/50
Tactual	20/20	Sequential	42/50
Auditory	11/10	Intuitive Feeler	14/12
Visual	30/35	Intuitive Thinker	14/12
Abstract	26/30	Sensing Judger	32/38
Concrete	63/70	Sensing Perceiver	39/38

### Internal Consistency

To complete this portion of the field-test, we will be working with a base of 100 adults, chosen randomly.



## Conclusion

Overall, the results of the studies met and sometimes exceeded our expectations. We were gratified. The lower scores remain because of the trade-offs we chose in the process. The profile is by no means perfect, and we expect unforeseen conditions and

results will influence its use. We are looking forward to refining it further as its first publication provides an even broader source of information. Your insights and ideas are most welcome as we work continually to improve PLS's service to our clients.



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