
VIEW: An Assessment of Problem Solving Style

Edwin C. Selby, Donald J. Treffinger, Scott G. Isaksen, and Kenneth Lauer

This document is a working paper, the purposes of which are to describe the three dimensions of *VIEW: An assessment of problem solving style*, to describe the instrument's development, and to summarize briefly the preliminary psychometric support for its validity and reliability. This paper does not provide an overview of the theoretical and conceptual foundations of VIEW, which topics are addressed in the VIEW User's Manual and in separate journal articles; contact the authors for additional information.

The Three Dimensions of VIEW

VIEW measures three important dimensions of style that relate directly to creative behavior, problem solving, and change management. VIEW was designed to assist and support people in using their preferences to solve problems and manage change effectively; it is not a generic style or type measure.

Orientation to Change: Explorer-Developer

VIEW's results are presented through three generally independent scales. The scores yielded by the first scale provide an overall indication of the person's perceived preferences along a continuum we describe as Orientation to Change (OC), with two general styles: the "Explorer" and the "Developer." As in all discussions of type and style, most people share some preferences associated with each of the styles. No single score or set of scores is more or less socially valued than any other, and no approach is more (or less) creative than others. Individuals emphasize these style preferences through their typical behavior across varying contexts and over sustained periods of time. The consistency or clarity of one's preferences contributes to the location of an overall preference score along the Explorer-Developer continuum. Those whose behavior and preferences are more clear, certain, and consistent have scores farther from the mean, toward either the Explorer or the Developer style.

The items comprising the OC dimension represent important cognitive aspects of problem solving style. This scale addresses the questions: "How do I prefer to deal with boundaries and parameters?" "How do I feel about and react to structure?" and "How do I prefer to respond to novel challenges?" Figure 1, on the following page, summarizes the major descriptors for both Explorer and Developer styles.

Scores below the mean on the OC scale indicate the Explorer style. In ordinary use, an "explorer" is an individual who thrives on venturing in uncharted directions, seeks to break new ground, and follow adventurous possibilities or promising new possibilities wherever they may lead. Explorers enjoy initiating a broad range of tasks, and thrive on new, ill-defined, and ambiguous situations and challenges. Explorers seek to create many unusual and original options that, if developed and refined,

might provide the foundation for productive new directions. They enjoy seeing unusual possibilities, patterns, and relationships, which may be difficult for others to understand or “buy into” initially. They tend to embrace new experience and to “plunge” right into novel situations. Explorers enjoy risk and uncertainty, and often improvise their planning as the situation unfolds, becoming so involved in the excitement of new, leading edge ideas that concerns about efficiency and practicality are forgotten. Explorers may continue to consider new ideas about a project, even after closure has been reached, or they may abandon a project before reaching any closure, so they can pursue new challenges. They often find plans, procedures, and structures that are imposed on them to be confining and limiting.

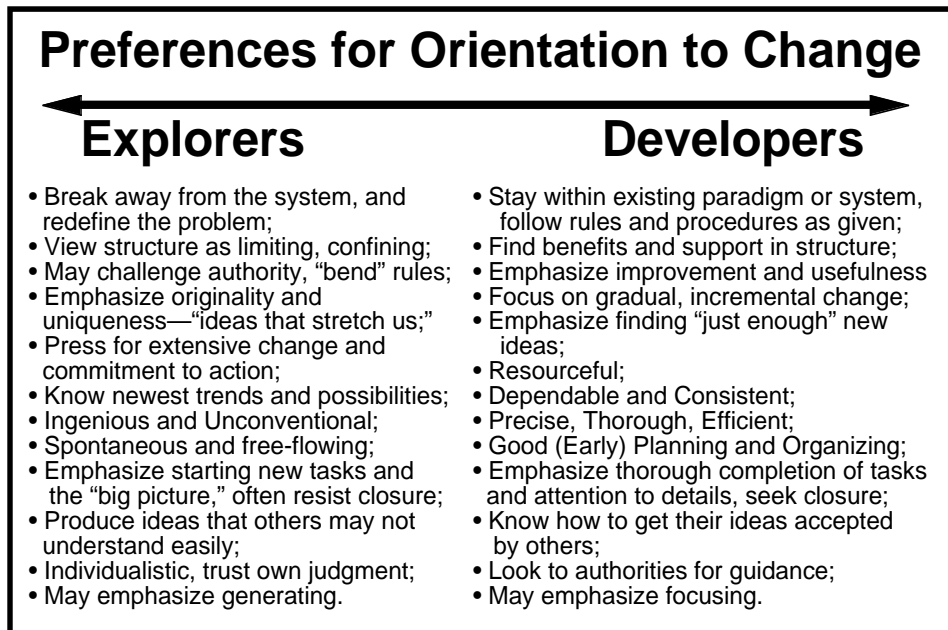


Figure 1: The Orientation to Change Dimension

Scores above the mean on the OC scale indicate the Developer style. In ordinary use, a “developer” is an individual who brings tasks to fulfillment, who begins with the basic elements or ingredients and then organizes, synthesizes, refines, and enhances them, forming or shaping them into a more complete, functional, useful condition or outcome. Developers are concerned with practical applications and the reality of the task, and they use their creative and critical thinking in ways that are clearly recognized by others as being helpful and valuable. They prefer problems and solutions that are within the framework of their present experience, seeking change that is incremental, practical, and easily assimilated by the current reality. Developers prefer finding a small number of workable possibilities and guiding them to successful implementation. They tend to focus on bringing one task to closure before taking on a new challenge. Others often see Developers as persistent, careful, practical, methodical, well-organized, and seeking to minimize risk and uncertainty. They are comfortable with plans details, structure, and the guidance of authority figures. They find structure and the guidance of authority helpful, or even enabling, in moving tasks or projects forward in an efficient, deliberate manner.

Manner of Processing: External–Internal

A second dimension of VIEW describes one’s preferred manner of Processing (P) information during problem solving. This scale addresses the questions: “How do I prefer to manage information and its flow when problem solving?” “When do I share my thinking?” and “Does interacting with others build or spend energy?” Figure 2 presents a summary of some typical attributes associated with Professing preferences.

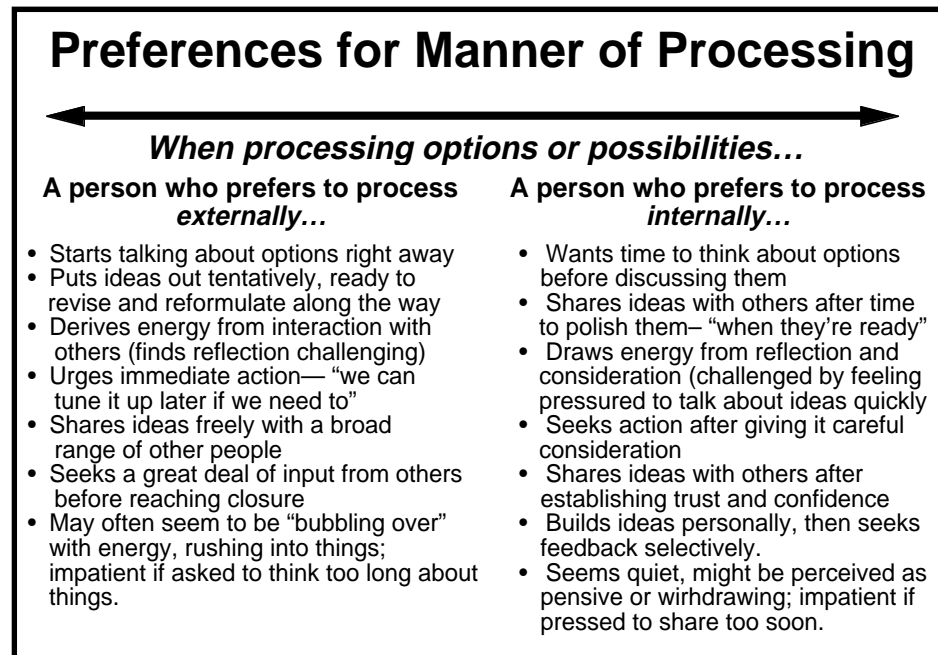


Figure 2: The Processing Dimension

Scores below the mean indicate a preference for an “External” style of processing. Individuals who exhibit a well-developed preference for this style draw their energy from interaction with others, discussing possibilities, and building from the ideas of others. They prefer physical engagement with the environment. When learning new and difficult material those with an External style preference clarify their ideas and understandings through discussion. They find the input of authorities helpful as part of their active discussion. They are not bothered by noise in the study area, approach learning in several ways, and often find that physical mobility enhances their learning, thinking, and problem solving. When solving problems, they seek a great deal of input from others before reaching closure. “Externals” tend to be seen by others as good team members and often appear full of energy. Preferring action to reflection, they may seem to others to be rushing into things before anyone else is ready to proceed.

Scores above the mean reflect a preference for an “Internal” style of processing. Those with a well-developed Internal style look first reflectively to their own inner resources and draw energy from

style of decision making look for mastery over the material they need to help them arrive at the “best solution” or response, or one that can be soundly defended or justified. They may stress the need for staying cool and free from emotion, while seeking clarity, precision, and logical order. Preferences on the Task-People dimension often affect the way individuals or groups define tasks and frame problem statements, the types of solutions they will consider acceptable, and the nature of the steps to plan and carry out in preparing for action.

Construction and Development of the Measure

The current research edition of VIEW consists of 34 items. There are 18 items dedicated to Orientation to Change (OC), and 8 items each for manner of Processing (P) and ways of Deciding (D). The directions call for respondents to consider the stem, “When I am solving problems, I am a person who prefers ...” for each of the 34 items. Then, the respondents mark one of seven points between two statements, such as:

Thinking aloud about ideas _ _ _ _ _ Thinking quietly about ideas
 Ideas that are original _ _ _ _ _ Ideas that are workable.

The respondents place a mark between each pair of statements closer to the left or right, so their choice will be nearer to the statement that best describes their personal preference, or usual way of doing things when solving problems. We ask them to think about the way of working that is most comfortable and natural for them, not the way they might wish they could be, or the way others want them to be. If both statements seem accurate but at different times, and to different degrees, respondents may place their mark on or near the center, in a position that best describes how they prefer to balance the two. Items are scored from 1 to 7, so the possible scores on the OC dimension range from 18 to 126, with a theoretical mean of 72, and the P and D dimension scores can each range from 8 to 56, with a theoretical mean of 32.

VIEW’s assessment design is unique, in that the two statements for each of the 34 items are all written so that both present positive expressions of a well established behavioral preference when solving problems or managing change; they represent choices that are balanced in terms of social desirability. We chose this approach in an effort to reduce the respondent’s motivation to provide responses they perceived as “socially desirable,” building on Kirton’s (1990) conclusion that individuals with a strong style preference considered that preference to be the most socially acceptable.

Supporting Psychometric Data

The current research edition of VIEW is the outgrowth of three rounds of development and revision based on data collected from more than 3,000 subjects, from 34 states and several foreign countries, and ranging in age from 11 to 84. The initial studies included more than 200 subjects, and an extensive second round of study (with a revised and improved item set) involved more than 2,000 subjects, including middle school, senior high school, community college, and university students, classroom teachers, educational administrators, church leaders, and business managers from within the

United States as well as internationally. Although we did not code data specifically to categorize socioeconomic or ethnic distribution, those who participated represented a broad spectrum of demographic groups.

Reliability of VIEW

This section presents data on the stability and internal consistency of VIEW. The data from our developmental studies indicated that VIEW meets the customary expectations regarding reliability to support use in research and training contexts.

Stability. A reliability study involving stability, as reflected in test-retest results over a one month interval, was carried out with 48 middle school students and nine adults. The correlations were .90, .60, and .65 for the OC, D, and P dimensions respectively. In another study of stability involving 23 adults over a one month period, the correlations were .85, .80, and .77 respectively. Nineteen subjects from the VIEW-MBTI study completed the VIEW again after two months. The two-month stability correlations were .93 for the OC dimension, .93 for P, and .84 for the D dimension.

Internal Consistency. We also conducted reliability analyses of internal consistency in each round of development's data collection, using Cronbach's coefficient Alpha. Additional validity and reliability studies were carried out during the Fall, 2001 and involved more than 700 new responses from business managers, educators, and students (public school, undergraduate, and graduate). The coefficient Alpha results for this sample were .81 (OC), .80 (P), and .70 (D). The Alpha reliability coefficients for the current published edition of VIEW, based on an initial sample of 467 subjects, are: .91 (OC), .87 (P), and .87 (D).

Evidence Supporting the Validity of VIEW

Demonstrating that an instrument is valid, or measures what it purports to measure, is an on-going process, not an "event" that can be established definitively in a single study or a specific set of results. Therefore, validation of VIEW, like any other new instrument, will require an on-going program of research by the developers and the active contributions of many other researchers over a period of years. We are committed to establishing and maintaining that research in our own work, and to encouraging research with VIEW by other investigators. Our initial work included several preliminary validation efforts that we consider promising, including both quantitative and qualitative procedures.

We have conducted factor analytic studies of the instrument during the most recent two rounds of development (with 2,000 subjects in one round, and more than 700 in the second round). Although the results and interpretation of factor analysis are more complex than warranted for the purposes of this paper, we did find that the hypothesized factor structure was confirmed in accord with customary statistical procedures and criteria. The analyses supported the predicted factor structure of the item set. (A separate technical paper summarizing these data is currently in preparation.)

Throughout our three rounds of development, reviewing all of the data we have collected there have been no significant correlations of the scores on the three VIEW dimensions with age or gender, with the exception of a greater preference for the Person style on the D dimension among female respondents. Based on psychological type theory and research (Myers et al. 1998) this was not a surprising finding.

Criterion-Related Validity: Correlations with Other Measures. We have studied correlations between scores on the VIEW instrument and several other measures that represent the theories and models that influenced us in designing and developing our instrument.

Dunn and Dunn Learning Style. We conducted a correlational study in our first round of development, with 191 subjects who completed our instrument and the Productivity Environmental Preference Survey (PEPS; Dunn, Dunn and Price, 1991). The results indicated, as expected, that subjects with an Explorer preference tended to prefer Informal Design, while subjects with a Developer preference scored higher on Motivation and Persistence.

A second study involving 28 adults who were administered our instrument and PEPS also yielded several significant correlations in the expected direction. While studying new and difficult material, Developers preferred Quiet, Formal Design, and Structure, while Explorers preferred Sound, an Informal Design, and little or no imposed Structure. Those with an External processing style also preferred Mobility, working with Peers, and working in the presence of Authority figures. Subjects with an Internal processing style preferred to work Alone and had no preference for Mobility.

The most recent study involved the responses of 118 North Carolina Senior High School Students, whose VIEW results were correlated with scores on the Dunn and Dunn Learning Style Inventory (Dunn, Dunn and Price 1993). These data yielded significant correlations ($p \leq .05$ or beyond) in the expected directions. Developers preferred Quiet, were high in Motivation and Persistence, preferred Structure and were motivated by Authority figures. Explorers had a study preference for Sound, preferred low external Structure, and were not motivated by Authority figures. Students who preferred Internal processing also preferred Quiet, Learning Alone, learning in a set manner, and learning Visually. Those with an External style of processing preferred learning with Peers, in the presence of an Authority figure, and learning in Several Ways, often with Sound in the background.

Kirton's KAI. Twenty-three educators were administered our instrument and the Adaption Innovation Inventory (KAI; Kirton, 1987a.). The correlation between the OC scores and the KAI total score was .89 ($p < .05$). Since, in the early stages of our work, the OC scale was reversed (so that low scores represented the Developer style), this result was in the expected direction. These results were obtained before we developed the Processing and Deciding scales. In another study with 48 subjects who responded to our instrument and the KAI, the correlation with the total KAI score and the OC dimension was .73 ($p < .01$). The D and P dimensions correlated -.14 and .24 respectively.

Among adults in international business organizations ($N=101$), using version 1.1 of VIEW (in which the scoring of the OC scale was reversed, so high scores now represented the Developer style), the correlation between VIEW OC and KAI total score was -.75. There were also significant ($p < .01$) correlations between OC and the three KAI subscales (OCxSO, $r = -.704$; OCxE, $r = -.70$; and OCxR,

$r = -.659$). Thus, Developers had lower, or more adaptive scores on each of the KAI subscales. In relation to Processing, there were significant, but moderate, negative correlations with KAI total score and all KAI subscales [SO, E, and R; $r = -.40, -.32, -.33$, and $-.34$, respectively, all $p < .01$). In all cases, subjects with an Internal processing preference tended to have more adaptive KAI scores. There were no significant correlations of VIEW Deciding preferences with KAI scores.

Myers-Briggs Type Indicator. A study involving 20 graduate and undergraduate students at an urban university in New York City examined the correlations of VIEW scores with scores on the Myers-Briggs Type Indicator (Myers et. al., 1998). The results were significant and in the expected direction (see the table, below). The OC dimension correlated .67 with Sensing/Intuition and .61 with Judging/Perception. (The Developer style was more strongly indicative of a Sensing and Judging MBTI® preference.) The correlations of the Processing (P) dimension correlated .59 with the MBTI Extraversion/Introversion scale, in the expected direction, and the Deciding (D) dimension of VIEW correlated .49 with the Thinking/Feeling scale of the MBTI, also in the expected direction.

	N	Orientation to Change	Processing	Deciding
MBTI- E/I	20	-.27	.59	.11
S/N	20	-.67	-.17	.24
T/F	20	.44	.02	-.49
J/P	20	-.61	-.15	.20

Qualitative Validity Evidence. In two stages of the development process, we also gathered qualitative data that lend support to the validation of the instrument. In one study, we asked a group of 23 adults in a CPS training program to complete a questionnaire at the conclusion of the program, in which we posed the question, “Did your overall score [on VIEW] agree with you own personnel assessment of your style preference?” In this group, 18 responded “yes,” three answered “only partly,” no one answered “no,” and two participants did not respond. As part of a middle school study, 10 parents voluntarily returned a survey asking how well the measure described their perception of their child’s typical behavior when solving problems. Four responded “very much so,” six responded “mostly,” while none responded “somewhat” or “not at all.”

Summary. Based on the data we have collected in our initial studies of VIEW, involving more than 3,000 subjects, we conclude that VIEW is a promising measure for use with individuals or groups with a sixth grade or better level of English proficiency when seeking to identify and describe individual problem solving style preferences. VIEW has demonstrated acceptable levels of reliability, and the initial validation studies have been supportive. Through the publication of a Research Edition of VIEW and the development of a well-qualified user base that includes researchers as well as practitioners, we intend to continue studying the instrument’s reliability, validity, and usefulness.