Knowledge Worker

Solution Paths: An Example

(December 2015)

Looking Back

In last month's column I introduced the concept of "Solution Paths" as an important factor in linking actions to outcomes. In this month's column I'll provide an example, including a brief description of how it was developed.

Solution Paths: An Example

I was asked to look into an operational problem in a division at a company where I was employed as a consultant on staff. The division director indicated the reject rate in a particular process was too high and he wanted me to see what could be done to get it lower.

The operation in question processed registration forms for a certification testing program and about 60-70 percent of the forms were being rejected because they failed computer edits that were related to missing or incorrect information on the form, including invalid institutional codes.

The errors on about half of the rejected registration forms could be resolved by staff but the other half of the forms had to be returned to the people who submitted them. Resolving simple errors and reentering the forms into processing constituted extra work and was an unnecessary cost. Rejected forms also meant that the registrant would likely not take the test when planned and this resulted in complaints from the registrants and the testing program's sponsors.

The starting point for this effort was the reject rate, the ratio of rejected forms to total forms processed. Clearly, to improve matters, the number of forms containing errors had to be reduced. Because the information on the form was provided by the registrants, lowering the reject rate meant reducing the errors made by registrants. Their behavior in filling out the registration form was yet another variable.

At this point, the structural model of interest is one of behavior and performance. I use the GAP-ACT Model, shown in Figure 1, to help identify the factors that would have to exist in order for desired performance to occur. The model led to some basic questions enumerated below.

- *Goals*. Do the registrants want to fill out the form in a way that satisfies the testing program's requirements? Are they aware of the consequences and costs to them if they don't?
- *Perceptions*. How would the registrants know if they had filled out the form correctly? Are they aware of the testing company's requirements?
- *Conditions*. Is there anything that interferes with the registrants filling out the form properly, in particular, the institutional code? Where do they get that code?

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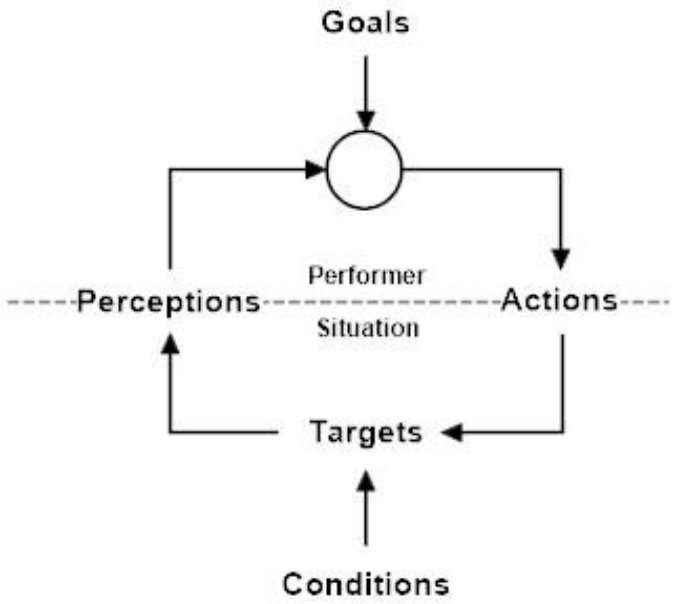

Figure 1 – GAP-ACT Model

The registrants were trying to register to take a certification test. A passing score was required to become certified and certification was a pre-condition for employment. Submitting a flawed registration form delayed taking the test, getting certified and obtaining employment, all of which delayed income. A failed registration attempt had negative financial consequences. If registrants knew this they should be motivated to fill out the registration form properly.

The registrants obtained the registration form from a test bulletin sent out by the testing company. Presumably, the bulletin explained how to fill out the form properly and explained the consequences of failing to do so in a correct and complete manner. As it turns out the bulletin instructions for filling out the form were minimal. Not all requirements were spelled out and nowhere were the registrants advised of the consequences of failure to fill it out properly.

The registrants obtained the institutional codes from a list provided by the testing company. The list was organized numerically, to aid the processing staff in identifying the institution associated with a particular code. However, the registrants had the name of the institution and were trying to obtain its code. The registrants needed a code list that was organized alphabetically.

In this case, the solution path ran from the bulletin and code list to the registrants and, through them, to the registration form. It was the performance of the registrants in filling out the form that was at the

heart of this issue. I could not directly act on the reject rate, on the errors, or on the registrant's behavior; nor could I directly change the test bulletin or the code list. However, I could explain the problem to the testing program's management and persuade them to undertake an effort to revise the bulletin and code list and, through those changes, affect the registrants' ability and motivation to fill out the form correctly and thus reduce the errors they were making. The payoffs to program management would take the form of reduced processing costs and fewer complaints from test takers.

The target variable – the errors driving the reject rate – and the influencing variables are shown in Figure 2 below. It depicts the solution path that was followed for reducing errors on the registration form.

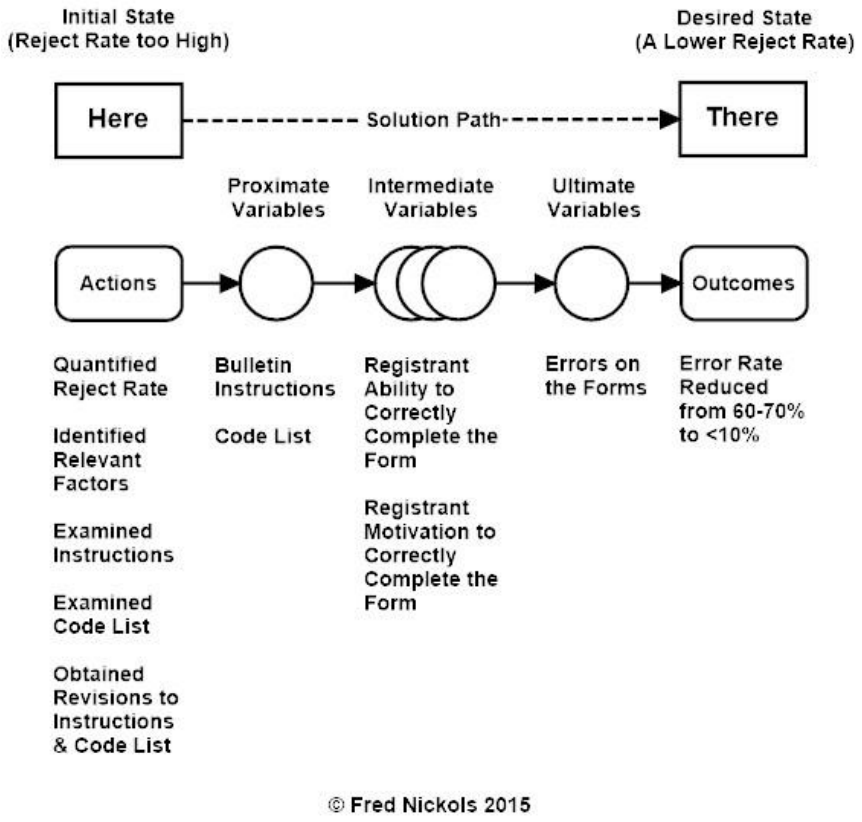

Figure 2 - The Solution Path for the Reject Rate Problem

Two key actions were taken: (1) the instructions in the bulletin were re-written and expanded, to include an example of a properly completed registration form as well as information advising the registrants of the consequences to them of failure to properly fill out the form and (2) an alphabetically organized code list was developed and provided. Errors on the registration form plummeted and rejects dropped from 60-70 percent to less than 10 percent. Test taker complaints were significantly reduced and, because the amount of time operational staff members spent in error resolution was greatly

decreased, some staff members were reassigned to other areas in need of support. Needless to say, charges to the testing program were reduced and test taker and sponsor complaints practically disappeared.

Closing Comments

Did I prepare a hard copy of the diagram above to guide my effort to resolve the error rate problem? No. But the GAP-ACT model I use to examine human behavior and performance did indeed guide my effort. I had that model in mind as a mental model of the variables in the situation facing me. I worked backward from the error rate to errors on the form to the registrants as the performers in question, whereupon I looked into how they would acquire the ability to fill out the form correctly and where they obtained the institutional codes. In turn, that led me to examine the instructions in the test bulletin and the code list. At that point, the necessary actions were obvious. With the solution in view, I worked to influence program management to make the necessary changes to the bulletin and the code list. In short, I used the GAP-ACT Model to figure out the solution path depicted in Figure 2.

As I indicated in last month's column, finding a solution path entails examining the structure of the situation and three basic kinds of structures are often involved: Mathematical, Operational and Behavioral. In this case, the mathematical model was simple enough: the ratio of forms with errors to forms received. The operational model was also straightforward: forms came in, were scanned and edited and those with errors were rejected. The primary structure of interest consisted of the variables that affected the behavior of the registrants. To solve the reject rate problem entailed getting the registrants to do a much better job of filling out the registration form and that involved (1) enabling them to fill out the form properly, (2) informing them of the consequences of failure to do so, and (3) removing an obstacle that prevented them from doing so.

Looking Forward

In next month's column I'll examine another example of a Solution Path. In this case, the primary structure of interest will be mathematical; more specifically, it will be a model of a key financial measure.

About the Author

Fred Nickols, CPT, is a knowledge worker, writer, consultant, and former executive who spent 20 years in the U.S. Navy, retiring as a decorated chief petty officer. In the private sector, he worked as a consultant and then held executive positions with two former clients. Currently, Fred is the managing partner of Distance Learning LLC. His website is home to the award-winning *Knowledge Workers' Tool Room* and more than 200 free articles, book chapters, and papers. Fred is a longtime member of ISPI and writes this monthly column for *PerformanceXpress*.