

# Expert/Novices differences in Case Analysis

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## Summary

We report a study of expert-novice differences in case analysis, a management and marketing training technique widely established in business schools and industry. While there is evidence for the technique's effectiveness, little is known about the cognitive processes that underlie case analysis, a lacuna this study set out to remedy. A secondary motivation was to explore expertise in tackling problems that are essentially undefined, and where problem discovery and description is a key activity.

The study consisted of the collection and analysis of verbal and written protocols of expert and novice marketers working individually in analysing up to four short marketing cases (approximately 1 hour per case). The experts were 11 members of academic Marketing departments, each of whom had extensive experience in teaching with the case method. The novices were 22 third year Marketing students, whose performance was tested prior to and after a one semester module on case analysis. The resulting protocols (over 100 hours of audio and videotaped transcripts) were subjected to two kinds of analysis. First, protocols were transcribed, chunked and coded using a scheme reported in Ormerod et al (1999), in which each transcript segment was coded according to cognitive act (e.g., evaluate, monitor, generate, paraphrase) and referent (e.g., case statement, external knowledge sources, prior knowledge, concerns and recommendations). Second, qualitative analyses of case outcomes were undertaken. From these analyses, a number of expert/novice and before/after training comparisons were made.

While a large proportion of the data await quantitative analysis, a number of initial results can be highlighted from the study:

- Although the time spent on analyses did not differ reliably between experts and novices, large qualitative differences were found between the groups. Experts generated more alternative recommendations, identified more critical issues and used more evaluative criteria than novices. The outcomes of their analyses were generally qualitatively better than those of novices, and were more likely to bring in issues not specifically referred to in the case statement. Novices also tended to reach a firm viewpoint or recommendation early (often during the first reading of the case statement), while some experts deferred reaching a recommendation until later in the analysis, were more likely to change their stance during the analysis, and in some cases did not reach a specific recommendation at all. Novice analyses focussed more upon outcome while expert analyses were more likely to focus upon process issues.
- Novice analyses tended to be disappointingly shallow, and constrained by the content and order of the case statement. Perhaps the most important general finding is that the final output of the analysis often seems to be a poor summary of the richness of the process that has gone before. This contrasted with expert analyses, which became more focussed yet did not lose the richer issues generated early in the analysis.
- Comparisons between novice analyses before and after training revealed evidence, both of an improvement in the quality of analyses, and changes in the processes of analysis. In particular, the depth of analyses increased, and solution development tended to be deferred until later in the analysis.
- A number of differences between case analysis and other creative problem-solving domains were identified. While phases of problem understanding, solution development, evaluation and review are common across domains, there was relatively little evidence in the expert protocols of the control activities (specifically scheduling and monitoring) that dominate protocols in domains such as design problem-solving. We putatively suggest 'snowballing' as a component of expert case analysis skills, that is, the online assembly and collation of key issues and recommendations that carry through an analysis in the absence of explicit control activities. There was also surprising little overt use of analogy or remembered exemplars in either expert or novice protocols. This contrasts strongly with evidence from studies (both within the current study and in an associated project) of group processes in case analysis. Another surprising

outcome is that experts tended to show more variability than novices. This contrasts with the majority of expertise domains, where increasing expertise typically leads to a convergence of process and outcome across individuals. Finally, the use of external documentation by experts was subject to great variability – some experts claimed deliberately to avoid early note-taking, as ‘reification of bad ideas’. There is some evidence that early documentation by some novices inhibited the quality of their subsequent analyses, since they tended to collate the documentation in place of a properly structured analysis output.

- The kinds of outcomes generated by both expert and novice groups are, at least in part, a function of the nature of the case itself. Where case statements represented the analysis as a choice between alternatives, this highly constrained the nature of the analysis, while cases that were open-ended typically elicited richer analyses, especially with the expert and post-training novice protocols. In the pre-training novice protocols, however, there is evidence that open-ended cases gave rise to large individual differences: while some participants produced richer analyses than with more constrained cases, others produced highly superficial and truncated analyses.

Analysing cases is a clearly a complex process with complex outcomes. As a result it is crucial to understand that while there may be recurrent cognitive and social processes common to all case analyses, these are modified by particular contingent factors. It is therefore important to realise the impact of the analyst, the setting and the case in trying to offer advice to case analysts and instructors. It would appear that experience and training help but the most effective ways are not entirely obvious, especially since initial learning effectiveness seems to be a function of individual differences in response to case type.

Despite the complexity of, and variability in, the results, a number of provisional recommendations and suggestions for further work can be drawn from the study. First, it would be helpful to find ways to capture the richness of early analyses, to prevent the losses of issues, recommendations and evaluative criteria that characterise case outcomes in novice protocols. We propose to explore mechanisms (both methodological and technological) that offer a form of ‘inverse scaffolding’ across case sessions. Second, despite the apparent gains made by novices after training, the expert protocols were much richer and more compelling. It may be valuable to develop case method training materials that provide, not only a case statement, but also transcripts of expert analyses as target exemplars of best practice. The effectiveness of this kind of ‘vicarious learning’ from analysis episodes, rather than simply from accompanying teaching notes, presents an interesting topic for further research. Third, it is clear that different things happen when students analyse cases as individuals and in groups. While it is fair to say that the majority of case method use focuses upon group activities, it is important to recognise both the differences between individual and group settings, and also the contribution that individual activities make to group processes. To do this requires a set of data elicited from groups that is directly comparative with the data reported here from individuals (notably before versus after training data from group analyses of new cases). Fourth, we focussed in this study on short case statements, as a way of establishing a baseline of performance in as simple a context as possible. Notwithstanding this deliberate simplicity, we have uncovered a richness of issues that might not have been anticipated from such simple cases (notably the between-case effects). However, studies of simple cases preclude the observation of many of the skills associated with more realistic cases, such as data handling, simulation, and possibly the kinds of control activity that are not apparent (and even not necessary) in small scale analyses.