Longitudinal Applications of Stepladder Technique for Enhancing Group Performance

Conner J. Lutterman, Erin E. Bowen, Ph.D.

Embry Riddle Aeronautical University

Abstract

This poster is an overview of a study which examined a more realistic application of the stepladder technique to a longitudinal project team engaged in a design/build/test engineering program. Observations, surveys, and archival data were analyzed to provide an accurate measure of cohesion, decision quality, and overall performance. Application of stepladder technique beyond one-time use is a unique addition to team performance research, as laboratory data on one-time creative tasks (like the task employed here) indicate limits to stepladder utility. Results were still inconclusive, however, the study did reveal potential for the stepladder technique to be successful in the future.

The Stepladder Technique

Dr. Rogelberg and his fellow researchers hypothesized that the stepladder technique could decrease the effect of common and significant process losses such as:

- communication limitations (idea suppression)
- social loafing (free riding)
- social conformity

The technique called for staggering the entrance of members into the group and requiring each member to contribute individually, reducing the effect of process losses on overall performance. Benefits included:

- each member could share their solution without suppression
- prevents social loafing as each member is required to contribute
- eliminates social conformity as each member is allowed to share their solution.





Results			
ANOVA			
Satisfaction with Groups		Perceptions of the Group	
Average		Average	
(Control)	4.5/5.0	(Control)	4.05/5.0
Average		Average	
(Stepladder)	4.03/5.0	(Stepladder)	3.7/5.0
F Value	8.58	F Value	1.04
P Value	0.01**	P Value	0.32
Affective Reactions (Negative)		Affective Reactions (Positive)	
Average		Average	
(Control)	2.82/5.0	(Control)	2.98/5.0
Average		Average	
(Stepladder)	3.5/5.0	(Stepladder)	2.87/5.0
F Value	1.81	F Value	0.05
P Value	0.2	P Value	0.82

Discussion

It is still inconclusive whether the stepladder technique is effective in practical scenarios. Results revealed the stepladder groups had significantly more positive observations, than did the control groups; seeming to preform better and more cohesively. However, the control groups out preformed the stepladder groups in the Satisfaction with Group category. This contradicts the results found by Dr. Rogelberg et al. and others, in addition to confirming Winquest and Franz (2008) study results. The control and the stepladder groups did not differ significantly overall and warrants further study. In the future, it is recommended that the tasks, even if more complex, have a more accurate grading scale or measurement for the overall outcome. In addition, observers and coaches dedicated to each teams would help ensure team followed the stepladder technique more closely.

Recommended Uses

It is recommended that the stepladder technique be used in practical settings. However, proper implementation and use is required. The technique can be used effectively, if the teams are trained effectively and adhere to the staggered integration and individual contribution of each member. Adaption of the technique maybe required, such as if subgroups are used or if time constraints are imposed.