

Creativity and Performance: The Effects of Working in Groups versus Working Individually

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Abstract

Industrial-Organizational Psychologists are interested in factors that can affect work productivity and performance among an organization's employees. Some professionals argue that two heads are better than one when it comes to being innovative and coming up with creative solutions. However, others feel that group settings tend to result in many hindering factors, such as conformity and production blocking. In the present study, I attempted to determine whether or not there is a differential impact of working in groups and working as individuals on creativity and performance. This was measured through a divergent thinking task based on Guilford's Alternative Uses Task (1967) and a convergent thinking task based on Mednick's Remote Association Task (1962). Introduction to Psychology students were asked to complete both tasks, once as a group and once as individuals. The alternative uses task asks participants to list as many possible uses for a single common household item within a span of three minutes, while the remote association task asks participants to answer a number of questions made up of three words and list the one word that associates the other three together. I hypothesized that participants working in an individual setting would score higher on the divergent and convergent thinking tasks than the same participants working on these tasks in a group setting.

Introduction

Creativity has been referred to as one's everyday problem solving skills and ability to adapt to change. Creativity is an important contribution to many organizations as it is what sets many businesses or organizations apart from one another.

The idea of whether creativity is more likely to be experienced in groups or with single individuals has become a concern for organizations as they rely heavily on innovation as a key factor in their success. An example of previous research on this topic involves a meta-analysis that compared individuals and groups on brain storming activities (Diehl & Stroebe, 1987). Researchers compared group totals to individual totals by judging productivity in terms of both quantity and quality. The results showed that those who worked alone generated about two and a half more ideas than those who worked in groups, and a significantly greater percentage of the ideas generated by individuals were judged to be of higher quality than those of the groups.

The purpose of the present research was to test whether there was a difference in mean scores between groups and individuals on creative potential. Creative potential was measured through a divergent thinking task and a convergent thinking task.

I hypothesized that participants working in an individual setting would score higher on the divergent and convergent thinking tasks than the same participants working on these tasks in a group setting.

Method

Participants

- 39 CSB/SJU students (26 women and 13 men)

Materials and Procedure

- Sessions were run with 6 - 7 participants at a time who were randomly assigned to start off in one of two groups: a group of 3-4 participants working together as a functional group and a group of 3-4 participants working as individuals. Participants completed both types of tasks in this group setting and then switched settings afterwards to work on different forms of the same type of tasks. This technique of counterbalancing allowed for all possible orders of presenting the tasks and avoided task order determining results.
- The alternative uses task involved asking participants to list as many possible uses for a single common household item such as a newspaper and jar within a span of three minutes.
- The remote association task involved participants being presented with 20 questions, each containing 3 words, and asked to come up with the one word that correctly associates the other three together. For example, a participant could be presented with the words "cottage", "blue", and "mouse", and the correct response would be "cheese."
- The alternative uses task was scored based on four components: originality, fluency, flexibility and elaboration. Only originality and fluency scores are present in the results section.
- Originality was scored by comparing each response to the total amount of responses from all participants. "Unique" group responses were awarded 2 points, meaning that no other group came up with the same response while "unusual" group responses were worth 1 point, meaning that only one other group came up with the same response. For individuals, "unique" responses were awarded 2 points if only given by 2 other individuals and "unusual" responses were awarded 1 point if given by more than 3 individuals, but less than 6.
- Fluency was scored simply by adding up the total number of responses given by each group and individual.

Results

A one sample t-test was used to determine whether there was a significant difference between groups and individuals in terms of creative potential determined through scores on the alternative uses task and remote association task. Contrary to the hypothesis, groups scored significantly better than individuals on both tasks.

In terms of both originality, ($t = -4.223$, $df = 38$, $p < .00$) and fluency, ($t = -10.165$, $df = 38$, $p < .00$) groups scored significantly better than individuals on the alternative uses task. For the remote association task, groups also scored better than individuals ($t = -16.108$, $df = 38$, $p < .00$)

Discussion

Contrary to the hypothesis, significant differences were found for both tasks in favor of the groups. Groups scored significantly better on both the alternative uses task and remote association task.

Although there are hindering factors in a group setting such as conformity and production blocking, there are also benefits of a group such as idea bouncing and diversity. It is also logical that with more people working on the same task, the more likely it is that more ideas will be given or that someone will be able to come up with the correct response.

Improvements could be made in the number of participants used as well as in the selection of participants. Participants were made up of students in an introductory psychology class and received PRIA credits for participating. If a larger number of participants were used, the researcher could have better been able to generalize about the population and potentially look at other factors that may vary and influence results.

A future study could examine how groups and individuals compare on other tasks that measure creative potential or performance. Groups and individuals could be compared on complex problem solving or brainstorming tasks.

References

Diehl, M., & Stroebe, W. (1987). Productivity loss in brainstorming groups: Toward the solution of a riddle. *Journal of Personality and Social Psychology*, 53(3), 497-509

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