

## Perceptions of age and creativity in the workforce

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## **Perceptions of age and creativity in the workforce**

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## **Perceptions of age and creativity in the workforce**

### **Abstract**

As the workforce ages it becomes important to examine if there is misperception of creativity and age in work contexts. A laboratory experiment examined perceptions of the creativity of a team with both young and old workers and of a team composed entirely of young workers. Scripted videos portrayed such teams engaged in designing an outdoor advertising campaign. Altogether, 220 participants were randomly assigned to watch one of the video clips and complete a structured questionnaire. No significant differences were observed in the perceptions of the two teams' performance or of the quality of the resulting advertising proposal. In general, there was also no significant difference in the individual characteristics attributed to the four characters on the teams. However, participants aged 35 or above evaluated both teams and all four characters more favorably than participants aged 20 to 34.

*Key words: perception; creativity; subjective evaluation; aging; teams*

## **Perceptions of age and creativity in the workforce**

### *Introduction*

Creativity is a prerequisite for an organization's effectiveness and competitiveness (Oldham, 2002; Shalley, Zhou, & Oldham, 2004). Increasingly, economists and policy makers are considering creativity and human talent as important capacities for economic growth (McWilliam, 2008). Meta-analytic research on the relationship between age and creativity has shown that age and creativity are not closely related (Eder & Sawyer, 2007). Older workers in creative industries are able to contribute as much as those who are younger. Misperception or bias can, however, distort personnel decisions.

Teamwork to complete tasks dominates in many business environments. Creativity helps teams solve problems through the integration of divergent perspectives (Barczak, Lask, & Mulki, 2010). As demographic changes lead to greater age diversity in business teams, it is important to understand to what extent perceptions of creativity depend on a worker's age. For example, would perceptions of a team's performance be affected by the team's age mix? A better understanding of such issues would help human resources personnel design better orientation program for young workers as well as staff development programs to help workers of different age groups to work together. It would also enable policy makers to design communication and education programs to support age diversity in the workforce.

This study had the following research objectives:

1. to examine perceptions of the performance of work teams with age diversity (both young and old workers) or with young workers only;
2. to examine whether the perception of team performance depends on the age of the observer.

## *Literature review*

Previous studies of age and innovation performance at the individual level suggest that the ability to produce economically relevant innovation demonstrates an inverse U-shaped relationship with age. Individuals aged 35 to 50 have the greatest potential for such invention (e.g., Frosch, 2011). But scholars have also found that creativity can be a reserve capacity in human individuals in adulthood and late adulthood. Participation in creative and collaborative problem solving programs such as the Odyssey of the Mind has enabled social engagement, intellectual engagement, and personal growth even among the elderly (Parisi, Greene, Morrow, & Stine-Morrow, 2007). Participants aged about 73 years with 16 years of formal education have shown significant gains in their cognitive processing speed, inductive reasoning as well as divergent thinking in the Odyssey of the Mind program (Stine-Morrow, Parisi, Morrow, & Park, 2008).

Heckhausen, Dixon and Baltes (1989) conducted a study in which adults of various ages were asked about perceived gains and losses of personal attributes at different ages in life. The participants were asked to indicate if they thought a set of adjective variables describing personality, social and intellectual characteristics would increase as an individual gets older. They were also asked to estimate the age of onset and disappearance of the variables. The study found that the participants perceived that desirable attributes continue to develop throughout adult development. Certain characteristics such as wisdom and dignity were described as having very late ages of onset and disappearance.

There have been studies of the performance of an age-integrated structure in the workforce. An age-integrated structure is a system in which chronological age is not used as a criterion for participation, entrance or exit (Uhlenberg, 2000). An

age-integrated structure usually involves adopting flexible age criteria in work, and bringing people of all ages to work together (Riley and Riley, 2000). Such an intergenerational workforce has various effects on team performance. Williams, Parker and Turner (2007) conducted a study in a petrochemical plant located in northeast England and found that age dissimilarity had little effect on perspective taking in teamwork. Work style dissimilarity was a strong predictor of positive attributions and empathy in teamwork. Shin and Zhou (2007) studied how heterogeneities in terms of age, gender, team tenure and educational specialization relate to team creativity and efficacy in research and development teams in 44 Korean companies of various sizes in the cable manufacturing, compressor, construction design, defense technology, electronics, information technology, networking, software and telecommunications industries. The results indicated that none of the heterogeneities was a significant predictor of team creativity. Team creativity was significantly predicted only by the interaction of educational specialization and transformational leadership style.

Bantel and Jackson (1989) studied how the composition of the top management team affects innovation in banking. The teams varied in terms of age, age diversity, tenure in the firm, education level, business experience and functional background. Bank size, team size and location were assessed as control variables. Most of the team members had a college degree in business. The results indicated that heterogeneity of functional expertise and education level were the strongest predictors of innovation. A flexible combination of individuals of different age, experience, education level and functional expertise benefits business innovation, at least in banking.

Wegge and his colleagues studied 745 natural teams with nearly 9,000 members in car production, administrative work and financial services and observed low salience

and high appreciation of age diversity with little age discrimination. They specified ergonomic design of work places, high task complexity, a positive team climate, and appointing age differentiated leadership as preconditions for the effectiveness of age-diverse teams (Wegge et al., 2012). A meta-analysis of results on the relationship between age and job performance found that age was unrelated to creativity, core task performance or performance in training programs. Age was, however, found to be related with better organizational citizenship behavior, better safety performance, less general counterproductive work behavior, and lower levels of workplace aggression, on-the-job substance use, tardiness, and absenteeism (Ng & Feldman, 2008).

Published research on work-place age stereotyping indicates that individuals hold some positive and some negative stereotypes about older employees in general (Bal, Reiss, Rudolph, & Baltes, 2011). For instance, older employees were more likely to be seen as experienced, more productive, and wiser (Finkelstein, Higgins, & Clancy, 2000; Kogan & Shelton, 1960; Taylor & Walker, 1998). Studies have shown that perceptions of the interpersonal qualities of older employees are more positive than physical and cognitive perceptions of employees in general (e.g., Crockett & Hummert, 1987).

The average age of Hong Kong's workforce has increased from 35.1 years in 1976 to 38.2 years in 2001 (Han & Suen, 2007) in line with the aging trend in Hong Kong's total population. Different industries have significant differences in the average age of their workers. Discriminatory beliefs and negative stereotypes about the productivity of older workers prevail among some Hong Kong employers, and they serve to legitimize their exclusion (Chiu & Ngan, 1999). A survey of Hong Kong employers found that the respondents considered younger workers as offering better value for money, higher productivity, better ability to deal with clients, and more aptitude for

learning new skills. On the other hand, older workers were considered as offering greater maturity and loyalty, as well as lower levels of turnover and absence (Education and Manpower Branch, 1996).

The results of these studies support the proposition that age diversity in work teams correlates with perceptions of team performance. Previous studies have attempted to predict an optimal level of age and expertise diversity to maximize team performance. We are not aware of any studies that compare the perceived performance of teams with and without age diversity in an experimental setting. Such perceptions would no doubt affect the degree to which organizations would support teams with age diversity in an aging world. Unless negative age stereotypes are moderated, many scholars and policymakers may foresee organizational performance being penalized due to the exclusion of or discrimination against an increasingly significant portion of the workforce. One such stereotype which has received insufficient scholarly attention concerns people's attitudes toward the contributions of workers of different ages in creative industries. This has been the first study to use an experimental design to examine perceptions of age and creativity. It was designed specifically to advance our understanding of prejudices about the creativity abilities of the elderly.

### *Theoretical model*

This study was designed to test whether people of different ages perceive the team and individual performance of work teams with or without age diversity differently. Previous studies have shown that negative age stereotype in terms of creativity arise from multiple sources, including limited processing capacity, strategies applied in process execution, patterns of information use, knowledge, as well as a motivation to reduce uncertainty (Mumford et al., 2006; Mueller, Melwani, & Goncalo, 2012). These findings suggest two specific hypotheses.



*Hypothesis 1:* All else equal, an observer will rate a team composed entirely of young workers (i.e. a team without age diversity) as more creative than a team with both young and old workers (i.e. a team with age diversity).

This would be true if people have biases about creativity and older employees are perceived as less creative. People are motivated to decrease uncertainty (Mueller, Melwani, & Goncalo, 2012), and they often rely on their insufficient knowledge to reduce it (Mumford et al., 2006), leading to prejudice. For example, employers in Hong Kong are known to believe that younger workers are more productive and better able to deal with problems (Education and Manpower Branch, 1996). In the absence of any hard evidence, they would presumably evaluate a team composed entirely of younger workers more favorably than a team with both younger and older workers.

*Hypothesis 2:* Younger participants will give work teams lower creativity ratings than older participants regardless of the teams' age diversity.

The younger generation perceives a job as something meaningful rather than a means of earning a living. They are more willing to be part of creative organization that values their creativity (Earle, 2003; Knight 2000). Younger employees often have high expectations (De Vos, Buyens, & Schalk, 2003; Thomas & Anderson, 1998) while older employees tend to be more realistic (Thomas & Anderson, 1998). As a result, younger people would evaluate work teams with or without age diversity less creative than older people.

## *Methods*

### Study design

The hypotheses were tested in a laboratory experiment using video images as a source of elicitation. The advantage of a laboratory setting is that it can isolate the influence of a particular set of independent variables and hence allows inferences about causation. The experimental design was a 2 (creative team with or without age diversity) x 2 (age above or below 35) factorial design. Age 35 was used as a cut-off point because it is the median age of employees in Hong Kong's creative industries. Half of the creative workforce is aged between 25 and 34 (Hui, 2003).

### Participants

The experimental subjects were 220 individuals recruited through personal networks. They included employees of a beverage company and two educational institutions, full-time employees in the commercial sector enrolled in an evening marketing course, as well as full-time business students. Among them, 121 (55 percent) were aged 20 to 34 and the remaining 99 (45 percent) were aged 35 or above. Thirty-two of the participants (15 percent) were full time students and the remainder were in full time employment. Two of the participants (0.9 percent) had only a primary school education, 84 of them (38 percent) had a secondary school education, and 132 (60 percent) had at least some tertiary education.

### Stimulus

Two video clips (each about five minutes) portraying advertising agency employees in a brainstorming session were produced by an in-house video production team. Each clip showed a team of four actors apparently working collaboratively to generate ideas for an outdoor poster campaign for a pharmaceutical product. The scripts of the two video clips were identical. In the first clip, two of the actors were aged 27 and the remaining two were aged 42 and 45. In the second clip all four actors were aged 27 or 28. Both video clips were in Cantonese. They were edited in such a way that the

camera angles and durations of exposure of all four characters were exactly the same in both videos. The storyline is summarized in Appendix 1; images of the actors are provided in Appendix 2.

### Procedures

The participants were randomly assigned to one of the two experimental conditions: viewing a video clip featuring a team with or without age diversity. One hundred and ten of the participants (50 percent) were assigned to each condition. In order not to prime the participants, the research objectives were not disclosed to them before or after the study. They were informed only that the study was about teamwork and communication in the workforce.

All participants first took the Test for Creative Thinking – Drawing Production (TCT-DP) (Form A) (Jellen & Urban, 1986; Rudowicz, 2004) as a baseline measure of their own creativity. The viewing was then in groups of 12 to 25 participants. After the viewing, each participant answered nine questions assessing his or her perception of the performance of the work team in the clip in terms of attributes such as creativity, effectiveness, and flexibility. Six-point Likert scales were used to express the perceptions. The mean score of all nine items was taken as that participant's overall assessment of the team's performance. The Cronbach's alpha for the overall team performance scale was 0.89. The participants were also asked to evaluate the quality of the final advertising proposal using a 100-point scale (with 0 indicating an extremely poor proposal and 100 a perfect proposal). They were instructed to evaluate overall quality in terms of appropriateness and originality (Rietzschel, Nijstad, & Stroebe, 2007; Sternberg & Lubart, 1999). Snapshots of four characters in the video were presented in the questionnaire, and the participants were asked to evaluate each of the four characters on five attributes including problem solving skills, flexibility,

positive attitudes, imaginativeness, and creativity. Six-point Likert scales were again used. The mean score of all five attributes quantified the participant's overall perception of each character portrayed. As a manipulation check, the participants were requested to guess the age of each of the four characters appearing in the clip they saw.

### Data analysis

The data were the responses to the nine questions on perceived team creativity and effectiveness, the overall team performance assessments, and the judgments about the quality of the final advertising proposal. The answers to the five questions on the attributes of the characters and the overall perceptions of their attributes were also analyzed. The independent variables were the age of the participants and the experimental condition (viewing a team with or without age diversity). The participants' TCT-DP scores and educational levels were used as covariates. Analysis of covariance (ANCOVA) was used for data analysis.

### *Results*

The participants' own creativity as measured by the TCT-DP test ranged from 6.5 to 49.5 with a median of 24.0 and a standard deviation of 10.0 points. Two graduate assistants coded the drawings and the inter-coder reliability measured by an intra-class correlation coefficient was 0.85.

### Manipulation check

Appendix 2 shows the actors in the videos. Their mean perceived ages were 36.4 for A1, 42.6 for B1, 33.0 for C and 27.3 for D. Among those who viewed the second video the corresponding ages were 28.2, 24.2, 34.7 and 26.4 respectively. Independent *t*-tests revealed significant differences in the age estimates for characters A1 and A2 ( $t(218) = 16.28, p < .001$ ), as well as for B1 and B2 ( $t(218) = 36.63, p < .001$ ). So the

manipulation of the characters' ages was valid. The mean ages estimated for team A and team B were 34.8 and 28.4 respectively, a significant difference ( $t(217) = 17.55, p < .001$ ).

#### Perceived performance of the teams with or without age diversity

Table 1 and Figure 1 summarize the participants' perceptions of team performance by type of team and by participant age after controlling for the participant's creativity score and educational level. The participant's own creativity score was included as a covariate because more creative people may be less impressed by the creativity portrayed in the videos. Education was also included as a covariate because it was correlated with the participants' creativity scores  $r = .19, p < .01$ .

[Insert Figure 1 about here]

Analysis of covariance (ANCOVA) was conducted to examine if the perception of team performance was affected by type of team, the age of the observer, or the interaction between those two variables, after controlling for the participant's creativity score and educational level. The  $F$ -test results are summarized in the last three columns of Table 1.

[Insert Table 1 about here]

There was no statistically significant difference in the participants' assessments of the performance of the two teams in the videos. The mean overall team performance scores were 3.7 for the team with age diversity and 3.6 for the team without ( $t(214) = 1.03, n.s.$ ). The participants' ages, however, were significantly correlated with their perceptions of the performance of the team they viewed ( $F(1, 208) = 12.50, p < .001, \eta^2_p = .06$ ). Participants aged 35 or above were likely to give better overall team performance ratings than participants aged 20 to 34 for both video clips. Among the

nine team performance items, seven showed significant age differences, with participants 35 or older likely to rate the teams higher on all of them.

#### Perceived quality of the final advertising proposal

The participants were asked to evaluate the quality of the final advertising proposal on a 100-point scale. The mean scores of two teams' proposals were 61.9 and 61.2, a difference which was not statistically significant ( $t(218) = 0.28$ , n.s.). *F*-tests again revealed that a proposal's score did not depend on the type of team ( $F(1, 212) = .04$ , n.s.) but rather on the age of the observer ( $F(1, 212) = 4.44$ ,  $p < .05$ ,  $\eta^2_p = .02$ ). Participants aged 35 or above were likely to give higher quality scores regardless of which video they saw.

Overall, the data provide no evidence of negative stereotyping of teams with age diversity in the workforce. The respondent's age group did, however, have a significant relationship with his or her perception of team performance. The effect was significant after controlling for creativity score and educational level.

Participants aged 35 or above were more likely to evaluate the team performance and the final advertising proposal positively than participants aged 20 to 34.

#### Perceptions of the team members

Participants' perceptions of individual attributes of the four characters portrayed are summarized in Table 2. After controlling for the respondent's own creativity score and education level, the respondents in general found no significant differences in the individual attributes of the four characters on the two teams. The only significant difference was for character D. *F*-tests revealed that the creativity attributed to character D depended on type of team he was in ( $F(1, 212) = 4.79$ ,  $p < .05$ ,  $\eta^2_p = .02$ ). Character D was perceived as more creative when she appeared in the more age

diverse team. The participants in general found the four characters in the two teams equally creative, flexible, positive, imaginative, and good at problem solving.

A participant's age group had a significant correlation with his or her overall perception of three of the four characters portrayed: character B,  $F(1, 212) = 9.24, p < .01, \eta^2_p = .04$ ; character C,  $F(1, 211) = 5.67, p < .05, \eta^2_p = .03$ ; and character D,  $F(1, 212) = 13.35, p < .001, \eta^2_p = .06$ . Participants aged 35 or above were more likely to evaluate those three characters positively than participants aged 20 to 34. Controlling for the respondent's creativity score, education level and whether he or she was a student or an employee did not change those results. So the effect did not just reflect the different perceptions of inexperienced students versus persons with active experience in the workplace.

[Insert Table 2 about here]

#### Age and performance perceptions

Two-way ANCOVA revealed that participants aged 35 or above gave higher scores for team performance, the quality of the final advertising proposal, and the four individuals' performance than participants aged 20 to 34 for both videos. A series of multiple regression analyses were conducted to predict perceptions of team performance, the quality of the final proposal, and the performance of the four characters based on the observer's own creativity level, education, occupation (student vs. non-student), age, which clip viewed (the team with age diversity vs. the team without age diversity), as well as the interaction of the clip viewed with age. In forming the interaction term, clip viewed and the participants' ages were first mean centered in order to minimize collinearity (Aiken and West, 1991). Participants' creativity levels, education levels, and occupations were added in the first step, and clip viewed, age, and clip viewed X age in the second step.

Table 3 presents a summary of the results with respect to team performance and the quality of the final proposal. The individual performance results are summarized in Table 4. The observer's own creativity level was not associated with any of the dependent variables. Participants who were non-students and had higher education levels tended to evaluate both teams more favorably than students and those who had received less education. Multiple regression and two-way ANCOVA generated similar results. As Table 3 shows, after controlling for the observer's creativity, education and occupation, the observer's age was positively correlated with his or her perceptions of team performance and the individual performance of characters B, C, and D. The clip viewed was not associated with any of the dependent variables. A participant's age did not significantly predict their assessment of the quality of the final advertising proposal. The link between a participant's ages and his or her assessments of character D was moderated by which clip the participant had viewed. The findings of the multiple regression analyses indicate that participants' perceptions of team and individual performance in general were more favorable with age. Also, the clip viewed X age interaction proved unrelated to perceptions of team and individual performance in general.

[Insert Table 3 about here]

[Insert Table 4 about here]

Since the participants rated the team with all young workers (i.e. a team without age diversity) as equal to the team with both young and older workers (i.e. a team with age diversity) in terms of team performance, the performance of the individual team members, as well as the quality of the advertising proposal, H1 was not supported.



Since younger respondents rated both teams as less creative than older participants, H2 was supported.

### *Discussion*

This study was designed to measure perceptions of the performance of work teams experimentally. A novel feature is that the participants were prompted by video clips scripted to give a snapshot of the creative process at work, including the interaction of the members of a creative work team.

The results revealed no bias in the participants' evaluations related to the age diversity of the team. The data show no systematic negative age stereotyping against more mature creativity workers in the work context. There was also no age stereotyping evident in the evaluations of the quality of the final creative product. Confucian ethics dictate that subordinates should obey their superiors and younger people should obey their elders (Hwang, 1999; Lee, 2000), but the respondents in this study, raised in a culture which values Confucian ethics, perceived both teams as able to produce equally good advertising proposals. This result is consistent with Ng and Feldman's (2008) finding that age is unrelated to core task performance and to creativity. This is a piece of good news given that age heterogeneity prevails in the workforce. As participants' perceptions of team performance were similar regardless of age diversity, organizations should not worry about the functioning of age-diverse teams. In fact, they should support such teams in an aging workforce.

The results also show that there was a systematic difference in perceptions of team performance among participants of different ages. Overall, perceptions of the performance of both teams were more favorable among participants aged 35 or above than among those aged 20 to 34. The older participants were also more likely to give higher scores for the quality of the final advertising proposals generated by both

teams than participants aged 20 to 34. In other words, participants aged 35 or above were generally more “lenient” evaluators than participants aged 20 to 34. The effect was still significant even when the participants’ creativity, education and employment status were controlled for as covariates.

These findings support those of previous studies showing that young employees often enter the workforce with high expectations (De Vos, Buyens, & Schalk, 2003; Thomas & Anderson, 1998) while older employees often have more realistic expectations (Thomas & Anderson, 1998). Younger employees born between 1979 and 1985 (termed Generation Y) are sometimes described as more demanding than their elders and more willing to express their opinions (Earle, 2003; Knight 2000). With a low tolerance for boredom, they seek respect from their colleagues and responsibility from early in their careers (Glass, 2007; Martin, 2005). They dislike menial and repetitive work and seek new challenges in the workplace (Saba, 2006; Martin, 2005). The participants aged 20 to 34 in this study belong to Generation Y, and their lower performance ratings for both teams may reflect higher work performance demands among Generation Y workers in general. The results point to a need for orientating younger employees about realistic expectations in interpersonal interactions and team performance in the work context. The significant age differences observed may constitute an important advance in theoretical understanding.

The current study did not find significant difference in performance of work teams with or without age diversity. Future researchers who are interested in investigating perceptions of creativity and age in the workplace can avoid replicating this study’s non-significant results and allocate their resources elsewhere. The non-significant

findings may, however, provide guidelines for future researchers exploring other, more relevant factors (Mills & Woo, 2012).

As with any laboratory study, care is required in generalizing the findings beyond the group under consideration. This is particularly so since all the respondents in this study were Chinese. Second, the age ranges portrayed in the videos were 8 years and 18 years. It would be desirable to test more diverse teams in future studies, especially teams portraying much older participants near retirement age. A team composed entirely of older employees also might generate useful results. All these possibilities provide opportunities for fruitful future study.

It is not clear why the interaction term combining the clip viewed with the respondent's age showed a significant relationship with the perceived performance of character D. This was not explored in greater detail because it was not the focus of the study, but in a future study participants might be asked to evaluate each of the characters on social courage, which may give female workers like character D more credit (May, 1985).

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Table 1.  
*Perceptions of Team Performance and Proposal Quality by Type of Team and by Respondent's Age after Controlling for the Respondent's Creativity Score and Educational Level*

Respondent's Age Variables	Team with age diversity			Team without age diversity			Total		F value		
	<u>20-34</u>	<u>35 or above</u>	total	<u>20-34</u>	<u>35 or above</u>	total	<u>20-34</u>	<u>35 or above</u>	age	team	age x team
communicative	3.8	4.1	4.0	3.6	4.0	3.8	3.7	4.1	4.7*	0.9	0.0
trusting one another	3.3	4.0	3.6	3.3	3.9	3.6	3.3	3.9	16.5***	0.0	0.0
cooperative	4.0	4.5	4.3	4.3	4.5	4.4	4.2	4.5	4.7*	0.4	1.0
problem solving	3.3	3.8	3.5	3.2	3.5	3.4	3.3	3.7	7.1**	0.9	0.5
flexible	3.4	3.9	3.7	3.2	3.8	3.5	3.3	3.9	15.6***	1.2	0.2
efficient	3.4	3.8	3.6	3.2	3.4	3.3	3.3	3.6	2.3	3.3	0.3
positive	4.0	4.1	4.1	4.0	4.0	4.0	4.0	4.1	0.3	0.1	0.2
creative	2.9	3.4	3.1	2.8	3.3	3.1	2.9	3.4	8.8**	0.1	0.0
imaginative	2.9	3.5	3.2	3.0	3.4	3.2	2.9	3.5	10.0**	0.0	0.1
Overall team performance	3.4	3.9	3.7	3.4	3.8	3.6	3.4	3.8	12.5**	0.7	0.2
Quality of the final proposal#	59.0	65.0	62.0	59.0	63.9	61.5	59.0	64.4	4.4*	0.0	0.1

Note. N = 220. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ . # on 100-point scale

Table 2.  
*Perceptions of Individual Attributes by Type of Team and by Respondent's Age after Controlling for the Respondent's Creativity Score and Educational Level*

Attributes of Character	Team with age diversity			Team without age diversity			Total			<i>F</i> value	
	<u>20-34</u>	<u>35 or above</u>	total	<u>20-34</u>	<u>35 or above</u>	total	<u>20-34</u>	<u>35 or above</u>	age	team	age*team
<b>A</b> overall	4.0	4.3	4.2	4.1	4.3	4.2	4.1	4.3	3.8	0.2	0.1
problem solving	3.9	4.3	4.1	4.0	4.2	4.1	3.9	4.2	4.6*	0.1	0.5
flexible	4.1	4.4	4.2	4.0	4.2	4.1	4.1	4.3	2.6	0.4	0.2
positive	4.6	4.7	4.6	4.7	4.9	4.8	4.6	4.8	1.4	2.2	0.0
creative	3.8	4.0	3.9	3.8	4.0	3.9	3.8	4.0	2.3	0.0	0.0
imaginative	3.7	4.1	3.9	3.9	4.2	4.1	3.8	4.1	3.6	0.8	0.0
<b>B</b> overall	3.4	3.8	3.6	3.3	3.8	3.6	3.4	3.8	9.2**	0.0	0.0
problem solving	3.2	3.7	3.4	3.0	3.6	3.3	3.1	3.6	11.6**	0.9	0.1
flexible	3.6	3.8	3.7	3.3	3.7	3.5	3.4	3.7	3.4	1.9	0.5
positive	3.8	4.1	4.0	3.5	3.9	3.7	3.7	4.0	4.2*	3.1	0.1
creative	3.2	3.8	3.5	3.5	4.0	3.7	3.3	3.9	10.0**	2.2	0.3
imaginative	3.2	3.6	3.4	3.5	3.9	3.7	3.3	3.8	7.1**	3.5	0.0
<b>C</b> overall	3.0	3.3	3.2	3.0	3.4	3.2	3.0	3.4	5.7*	0.0	0.4
problem solving	3.1	3.4	3.3	3.3	3.7	3.5	3.2	3.5	3.7	1.3	0.1
flexible	3.3	3.3	3.3	3.1	3.6	3.3	3.2	3.5	3.2	0.0	1.7
positive	3.4	3.4	3.4	3.4	3.8	3.6	3.4	3.6	0.9	1.0	1.7

creative	2.7	3.3	3.0	2.5	3.0	2.8	2.6	3.1	9.9**	2.4	0.1
imaginative	2.7	3.1	2.9	2.6	3.0	2.8	2.6	3.0	6.4*	0.1	0.0
<b>D overall</b>	3.5	3.9	3.7	3.2	3.9	3.5	3.4	3.9	13.4***	1.5	1.1
problem solving	3.4	3.8	3.6	3.3	4.1	3.7	3.4	4.0	13.2***	0.7	1.5
flexible	3.6	3.8	3.7	3.2	3.9	3.5	3.4	3.9	9.7**	1.0	2.0
positive	4.1	4.3	4.2	3.7	4.2	4.0	3.9	4.3	5.9*	3.6	1.4
creative	3.2	3.7	3.5	2.9	3.4	3.2	3.1	3.6	9.7**	4.8*	0.0
imaginative	3.3	3.7	3.5	3.1	3.6	3.4	3.2	3.7	9.4**	1.0	0.1

Note.  $N = 220$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 3.

*Multiple Regression Analyses Predicting Perceived Team Performance and the Quality of the Final Proposal*

Predictor	<u>Perceived team performance</u>				<u>Quality of the final proposal</u>			
	<u>Step 1</u>		<u>Step 2</u>		<u>Step 1</u>		<u>Step 2</u>	
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
Creativity	-.11	-1.61	-.05	-.69	-.03	-.48	.01	.08
Education level	.18	2.60*	.19	2.75**	.19	2.65**	.20	2.74**
Student	.23	3.14**	.11	1.33	.13	1.74	.06	.67
Clip viewed			-.04	-.68			-.01	-.12
Age			.23	2.74**			.15	1.71
Clip viewed X Age			-.05	-.68			-.03	-.42
R <sup>2</sup>	.08		.12		.04		.05	
$\Delta R^2$	.08		.04		.04		.01	

*Note.* Educational level: Primary school = 1, Secondary school = 2, Tertiary = 3.  
 Student: Yes = 0, No = 1. Clip viewed: Team with age diversity (young and old workers) = 0, Team without age diversity (young workers only) = 1.

\*  $p < .05$ . \*\*  $p < .01$ .

Table 4.  
*Multiple Regression Analyses Predicting Perceived Performance of the Four Characters*

Predictor	<b><u>Character A</u></b>				<b><u>Character B</u></b>			
	<u>Step 1</u>		<u>Step 2</u>		<u>Step 1</u>		<u>Step 2</u>	
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
Creativity	-.02	-.32	.02	.33	.05	.66	.11	1.46
Education level	.24	3.47**	.25	3.55***	.16	2.30*	.17	2.48*
Student	.25	3.53**	.19	2.32*	.23	3.15**	.12	1.46
Clip viewed			.04	.65			-.00	-.03
Age			.15	1.73			.23	2.66**
Clip viewed X Age			-.08	-1.21			-.04	-.66
R <sup>2</sup>	.08		.11		.05		.09	
$\Delta R^2$	.08		.03		.05		.04	

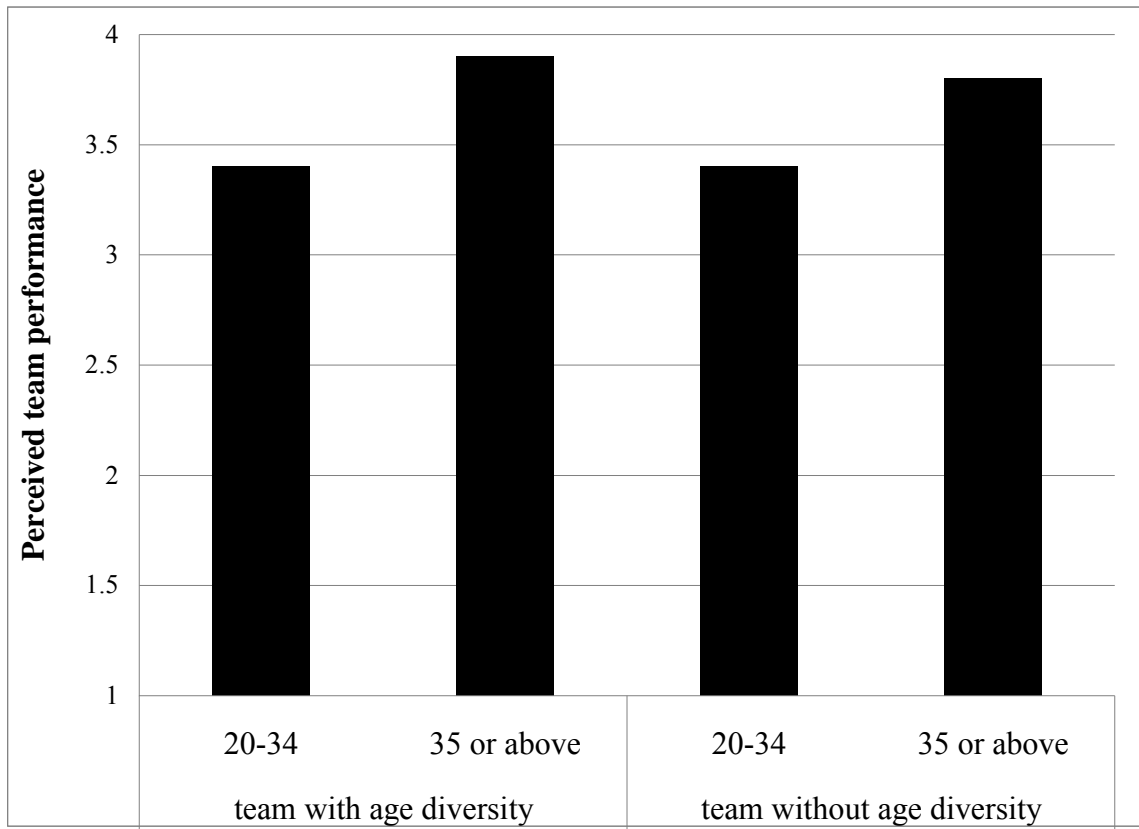
  

Predictor	<b><u>Character C</u></b>				<b><u>Character D</u></b>			
	<u>Step 1</u>		<u>Step 2</u>		<u>Step 1</u>		<u>Step 2</u>	
	$\beta$	t	$\beta$	t	$\beta$	t	$\beta$	t
Creativity	-.10	-1.40	-.04	-.51	-.21	-2.98**	-.12	-1.79
Education level	.24	3.34**	.26	3.76***	.13	1.79	.16	2.37*
Student	.10	1.33	-.07	-.86	.01	.13	-.22	-2.82**
Clip viewed			.02	.29			-.08	-1.35
Age			.32	3.87***			.43	5.41***
Clip viewed X Age			.10	1.53			.13	1.98*
R <sup>2</sup>	.06		.13		.05		.19	
$\Delta R^2$	.06		.07		.05		.14	

*Note.* Educational level: Primary school = 1, Secondary school = 2, Tertiary = 3.  
 Student: Yes = 0, No = 1. Clip viewed: Team with age diversity (young and old workers) = 0, Team without age diversity (young workers only) = 1.

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Figure 1.  
*Summary of perceived team performance by type of team and by respondent age group*

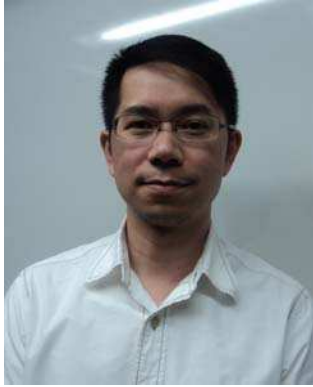


Appendix 1. *Description of the storyline*

Storyline: Characters C and D brief A and B on a task to design an outdoor poster ad for a flu medicine. The product's unique benefits include high effectiveness and no side effects. Characters A and B try to come up with advertising solutions using forced association, direct comparison with competitive products, and mood generating techniques. Characters C and D make constructive comments throughout. The final shot shows A and B in silence, thinking about new creative ideas.

Appendix 2. *Characters in the two video clippings*

*Characters in the first video*



A1



B1



C



D

*Characters in the second video*



A2



B2



C



D