

# Video games can make us creative if spark is right

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Video games that energize players and induce a positive mood could also enhance creativity, according to media researchers. However, the study also finds that players who were not highly energized and had a negative mood, registered the highest creativity.

"You need defocused attention for being creative," said S. Shyam Sundar, professor of film, video and media studies at Penn State. "When you have low arousal and are negative, you tend to focus on detail and become more analytical."

Sundar and Elizabeth Hutton, a Penn State graduate student, are trying to understand the value of video games as a vehicle for sparking positive social traits, such as creativity. Fun and games aside, video games are viewed as a serious communication technology. Schools, corporations and even the government are increasingly employing it as a tool in enhancing learning and decision-making.

"Video games are not just for entertainment alone," says Sundar. "We are trying to figure out how they can aid in education as well."

In the study, conducted as part of Hutton's graduate thesis, 98 undergraduate and graduate students were asked to play a popular video game, Dance Dance Revolution, at various levels of complexity. The students took a standard creativity test after playing. The researchers also took readings of the players' skin conductance and asked players if they were feeling either positive or negative after the game.

"We looked at two emotional variables: arousal and valence," said Hutton. "Arousal is the degree of physical excitation -- as measured through skin conductance -- and valence, which is the range of positive or negative feeling."

When the researchers ran a statistical analysis of the two emotional variables and the students' creativity scores, they found two totally different groups with high scores.

Players with a high degree of arousal and positive mood were most likely to have new ideas for problem solving. The statistical tests also revealed that creativity scores were highest for players with low arousal and a negative mood.

In real-life terms, the study appears to indicate that after playing the game, happy or sad people are most creative, while angry or relaxed people are not.

The findings suggest that either high or low arousal is key to creativity. In other words, medium amounts of arousal are not conducive to creativity.

"When you are highly aroused, the energy itself acts as a catalyst, and the happy mood acts as an encouragement. It is like being in a zone where you cannot be thrown off your game," explained Sundar. A negative mood, especially when there is low arousal, brings a different kind of energy that makes a person more analytical, which is crucial to creativity as well, he added.

Sundar and Hutton, the lead author on the paper, presented their findings today (May 23) at the 58th annual conference of the International Communication Association (ICA) in Montreal. Their work received a Top Paper award from the association's Game Studies division.

Researchers say that findings from the study could offer a set of rules that could be applied to a video game to see if it can make a person creative or lead to creative outcomes as soon as the game is over.

"We are not looking just at creative games, but what emotional elements of games can serve as an engine to spark creative thought and new problem solving skills," said Sundar, who is also a founder of the Penn State Media Effects Research Laboratory.

He envisions a scenario in which the emotional drivers that video games provide could be harnessed for creative outcomes, either in a classroom setting, or for corporate decision-making.

"The key is to generate emotion," explained Sundar. "Ideally, a good teacher can energize the class and make them much more emotionally invested through presentations, guest lectures, and group discussions. Video games can help achieve that in an already simulated way."

Source: Penn State

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