

How video games could help teach adolescents about empathy

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A study explores video game empathy training as a possible way to improve peer relationships and developmental outcomes.

During adolescence, the influence and salience of peer relationships reaches [a lifetime peak](#). Teenagers spend more time interacting with their peers than younger children or adults do, with an increased importance of friendships and the emergence of romantic relationships. They look to peer norms in terms of how to behave and have a greater need for peer acceptance.

Adolescents who have trouble cultivating peer relationships are more likely to experience [negative developmental outcomes](#) such as delinquency, mental health problems, and substance abuse. [Empathy training](#), which aims to increase the ability to understand the emotional experiences of others, has been proposed by some researchers as an intervention to help teenagers foster positive, supportive peer relationships.

A [recent study](#) tested empathy training in a group of adolescents using a novel video game format. The researchers hoped that re-packaging empathy training as a video game — a medium familiar to most teenagers today — would increase their engagement and overall empathy for others. [The findings](#) were published by the journal *Science of Learning* in August 2018.

“The ability to understand others’ emotions – empathy – is important for establishing and maintaining the peer relationships that are valued by adolescents,” said the study’s leading author [Tammi Kral](#), a PhD student in the [Center for Healthy Minds](#) at the University of Wisconsin-Madison. “Training empathy to adolescents has the potential to improve well-being at a time of life when many individuals are most likely to first experience psychopathology.”

First, Kral and her colleagues developed a story-based iPad game to train empathy called [Crystals of Kaydor](#). Players assume the role of a marooned robot explorer on a quest to help human-like aliens on a distant planet, such as finding missing birthday presents or sharing a ball with an excluded alien child.

“Re-packaging empathy training as a video game might increase teenagers’ engagement and overall empathy for others.”

The game includes a training tool in which players learn how to recognize the six basic emotions (anger, fear, happiness, surprise, disgust, and sadness) by paying attention to the aliens’ facial expressions and head movements. They receive feedback on their accuracy and can also then respond emotionally to the aliens by choosing their own facial expression. By responding in the

correct way, players advance in the game.

Participants, 74 adolescents with an average age of 12-13 years, played either *Crystals of Kaydor* or a control video game that did not include empathy training elements. After two weeks of daily gameplay, the researchers gave participants an empathic accuracy task, which measured their ability to accurately infer other's emotions. It involved watching videos of people talking about a personal experience, and the teenagers had to guess how positive or negative the speakers would rate their own emotions.

Both at baseline and again following two weeks of daily gameplay, the researchers gave participants the empathic accuracy task while also measuring their brain activity with functional MRI. The idea was to see whether those who had played *Crystals of Kaydor* would perform better on this task than those who had played the control game.

Mixed results

For those who played *Crystals of Kaydor*, Kral and her colleagues did not see a significant difference in empathic accuracy from pre-intervention to post-intervention. She notes that the study volunteers were highly accurate at the empathy task to begin with, so there wasn't much room for improvement.

There also was no difference in empathic accuracy change between the intervention group and the control group. So the findings based on the empathic accuracy task did not match up with their hypothesis.

However, they did find some interesting results after looking closely at the functional MRI data and also when looking closer at individual variation in the group. Participants who engaged more with the empathy training game mechanics in *Crystals of Kaydor* – in other words, those who attempted to guess the emotions of more aliens – had greater activation in areas of the brain linked to empathy.

“Video game empathy training has the potential to positively impact adolescents.”

Also, *Crystals of Kaydor* players who improved their empathic accuracy scores from pre-intervention to post-intervention had increased connectivity in these circuits. Lastly, the group who played *Crystals of Kaydor* had greater connectivity in empathy-related brain circuits when compared to the control group.

“It was exciting to see that engagement with the training aspects of the video game was specifically associated with increased empathy-related brain activation,” said Kral.

Although more research has to be conducted, these preliminary results demonstrate that video game empathy training has the potential to positively impact adolescents. Future studies could focus on this type of training for individuals who have difficulty understanding others' emotions, such as those on the autism spectrum. Video game empathy training may be utilized to improve empathy-related brain function and connectivity in such adolescents, who may find this type of technology more engaging and entertaining than traditional modalities.

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