

# How to Choose a Video-Game Based Cognitive Training Program

With the multitude of “brain-training” options on the market today, it is helpful to keep in mind the essential components that will make a program effective and rewarding.

1. **Evidence that it works.** Here you should ask three questions:
  - Where does the methodology come from? Is it speculative or has it worked?
  - Is there research that shows that the program improves cognitive skills? What skills and how much improvement has been seen?
  - Is there research that shows that the cognitive improvement translates to academic and real-life performance?
2. **Progressive challenge.** One of the principles of good video games is that each level gets progressively more challenging and that’s also critical for cognitive skill development. The concept is sometimes referred to as the “zone of proximal development.” The user needs to be challenged but not too far above his or her current ability level. But there’s more to it than simply getting more difficult at each level because what really drives cognitive growth also demands novelty and changed expectations. The program needs to include these.
3. **Cross-Training.** If a program develops skills independently, then your brain doesn’t get practice at using them together. Make sure that the program you choose develops the skills that you care about developing in a comprehensive and integrated way so that your brain will know how to “put it all together.”
4. **Feedback and coaching.** Another things that video games do that good cognitive training programs also do is provide instantaneous feedback, which is great because we learn from our mistakes and can make immediate adjustments and try again. It’s also helpful that computer feedback is not judgmental. Sometimes, though, it is helpful to have a coach working with the user, whether a parent at home, a teacher with students at school, or a clinician or therapist in their office. Ask what kinds of personal coaching or training of coaches is available if that is something you want to be able to access.
5. **Engagement.** It starts with themes, graphics, characters and animation, but it is really about the gamification. In order for the program to deliver significant cognitive growth, it will get hard for user – probably very hard – at some point. That is when engagement and motivation to persist are essential. Motivation to persist can be fostered by good coaching (see point 3 above), but the extrinsic and intrinsic rewards of the “game” and the degree to which the program delivers on the sense of developing mastery, builds the sense of autonomy and has an overall purpose are vital.
6. **Protocols to achieve specific goals.** While it may look like a video game, a cognitive training program should have a regimen or protocol for usage to deliver the benefits that it claims, based on research. There may be different protocols for different goals or for different types of users, taking into consideration the frequency and intensity needed to result in changes in the strength of neural networks. Just like going to the gym once a week might make you feel less guilty, but doesn’t do much for physical strength, flexibility or stamina, it will take multiple times a week for a number of weeks to make a noticeable difference with cognitive training. Make sure you know what to expect and that you will be able to follow the protocol to get the results you want.