**Quantum Entanglement vs. Quantum Interference**

The video on quantum entanglement and interference explains that there is a trade-off relationship between the two. Entanglement can work against interference. Using a quantum circuit diagram, the speaker demonstrates how entangling a qubit with a second qubit can act as a measurement, destroying the interference pattern that would normally occur. This concept is a problem for quantum computing, as entanglement with the environment (decoherence) can lead to a loss of computational power.

**Quantum Parallelism**

The video about quantum parallelism defines it as a property of quantum computers that allows them to calculate a function at multiple points simultaneously using a single unitary transform. The video illustrates this with a simple example involving a data and a value register, leveraging quantum superposition to produce an output superposition that contains information about all possible function values. However, the video notes that measuring the output only yields one value, which makes this specific procedure impractical for calculating function values compared to classical computers. The video concludes by mentioning that a future lesson will cover how to extract more information from a superposition state.