Integrated Task (TPO 50):

Scientists are considering the possibility of sending humans to Mars in the near future, however since Mars is considerably further away from Earth than the Moon, this poses an array of new challenges. The passage touches on three such problems which have to addressed when talking planning a manned mission to Mars, and according to the lecturer, there are solutions to all three of them.

The first problem is the enormous amount of resources a trip to Mars requires. Due to the fact that a trip to Mars is likely to take at least two years, the amount of food, water, and oxygen needed for the trip is going to be huge to sustain an entire team for that long and it would far exceed the cargo capacity inside modern space vehicles. However, according to the lecturer, astronauts could use a special type of plant that grows in water instead of soil which can help with these issues. This plant does not need much space in order to grow, and can provide them food to eat, can purify their waste waters to make it drinkable again, and can finally use photosynthesis to convert carbon dioxide into oxygen solving the resource problems.

The second issue is that since the astronauts are going to be in zero-gravity for an extended amount of time, they are susceptible to issues such as muscle mass decrease and lower bone density, which can result in grave medical problems. However, as the lecturer points out, many astronauts have been on the international space stations for extended periods up to 6 months, and have found ways to decrease the negative effects of zero-gravity. For example, they perform regular exercises to stabilize their muscle mass, while also taking vitamins and supplementary pills to decrease the speed at which their bones lose density.

Finally, the last issue mentioned by the passage is the danger of being overly exposed to solar radiation. Normally, Earth’s magnetic field protects humans from solar radiation, which astronauts do not benefit from, and building a shield to protect the entire spaceship from these radiations is also not possible due to the added weight it would entail. However, as the lecturer stated, the sun isn’t always radiating at a harmful rate and most of the times, astronauts would not be exposed to dangerous amounts of it. Furthermore, by shielding a certain section of the spacecraft instead of the entire thing and adding radiation detecting sensors, the astronauts can effectively move to the shielded section when the radiation does become harmful and protect themselves against it while simultaneously keeping the total weight down.

Time: 22 mins

Q: Do you agree or disagree with the following statement?

Because modern life is very complex, it is essential for young people to have the ability to plan and organize.

A:

Almost everyone has had the experience of being told stories to by a grandfather or grandmother. It seems that a common trait in many of these stories is that life used to be much simpler back in the day. Many agree that the last few decades have certainly made lives much more complex for a large percentage of people. As a result, many people wonder whether the ability to plan and organize is currently more essential than ever. Personally, I think the being able to plan ahead is an essential skill to have if one has to navigate many complexities in their life. I will elaborate on why I think this to be the case in the following paragraphs.

First of all, by planning ahead, people can significantly reduce the amount of risk they take in their lives. Naturally, no one wants to face a problem head-on without being properly equipped to do so. By being able to plan and organize before approaching a scenario, one is able to predict most of the challenges that may arise, and as a result, make adjustments to how they approach a certain challenge. These adjustments can be as simple as mentally preparing for a problem and can be complex as acquiring additional tools to minimize the damages if a problem occurs. Take mountain climbers for example. Many people who are new to mountain climbing usually only take basic supplies such as water and a tent and only thing about ascending the mountain when going on a simple climb. However, if these people planned ahead of time, like the more experienced veterans, they would realize they were ignoring the descending step afterwards, which is when most of the accidents happen, and would have brought extra tools such as a rope and a hammer.

Secondly, a person who organizes and plans ahead can sometimes find alternate approaches to a problem. Many challenges people face in their lives usually boils down to making a decision. When a person tries to make a decision on the spot without much prior thought, they almost always choose one of the obvious answers which quickly comes to mind. However, some problems have alternate smarter solutions that apply to them, which are trickier and take a bit of time to come up with, and as a result, are much more advantageous and result in better outcomes. Let’s take shopping as an example. Assume that a university student wants to buy a laptop for the upcoming semester. Normally, they would most likely go onto an online store and lookup laptops withing their price range and choose one and complete the purchase. However, if they had put in more time to prepare their approach, they might have noticed that a certain family member was going to buy acquire a newer laptop and no longer needed the older one which they could have purchased from them at a much cheaper price.

In summary, being able to plan and organize allows a person to significantly reduce the amount of risks they have to take, and possibly find alternate solutions to problems which can be much more beneficial to them. These benefits explain why many people, including myself, believe that the ability to plan ahead is one of the most essential skills to have to deal with the many complexities of life.

Time: 35 mins