**4.0 Results and Discussion: SSD Technology for Computing**

**4.1 Faster Data Transfer Speeds**

The objective is to achieve significantly improved read and write speeds compared to HDDs, ensuring quicker data access and reduced system lag.

Technical specifications for SSDs are sourced from Samsung. According to Samsung, their NVMe SSDs can deliver read speeds of up to 7,000 MB/s, significantly outperforming HDDs, which typically offer speeds below 200 MB/s [1].

This meets the criterion for faster data transfer speeds.

**4.2 Improved System Responsiveness**

The goal is to enhance overall system performance by minimizing latency and improving access times for applications and operating systems.

Data on SSD performance is obtained from Western Digital. Western Digital reports that SSDs reduce boot times by over 50% and decrease application load times significantly, offering a smoother and more efficient computing experience [2].

This meets the criterion for improved system responsiveness.

**4.3 Higher Durability and Energy Efficiency**

The aim is to provide a storage solution with increased resistance to physical damage while consuming less power.

Data are sourced from Crucial. According to Crucial, SSDs, having no moving parts, are up to 10 times more resistant to physical shock and consume up to 60% less power than HDDs [3].

This meets the criterion for higher durability and energy efficiency.

# References

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