

## Effects of Screen Time on Children from a Systems Engineering Perspective

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**Abstract :** This paper explores the effects of screen time on children from a systems engineering perspective. We reviewed literature from several related works on the effects of screen time on children to explore all factors and interrelationships that would impact children that are subjected to using long screen times. Factors such as kids' age, parent attitudes, parent screen time influence, amount of time kids spend with technology, psychosocial and physical health outcomes, reduced mental imagery, problem-solving and adaptive thinking skills, obesity, unhealthy diet, depressive symptoms, health problems, disruption in sleep behavior, decrease in physical activities, problematic relationship with mothers, language, social, emotional delays, are examples of some factors that could be either a cause or effect of screen time. A systems engineering perspective is used to explore all the factors and factor relationships that were discovered through literature. A causal model is used to illustrate a graphical representation of these factors and their relationships. Through the causal model, the factors with the highest impacts can be realized. Future work would be to develop a system dynamics model to view the dynamic behavior of the relationships and observe the impact of changes in different factors in the model. The different changes on the input of the model, such as a healthier diet or obesity rate, would depict the effect of the screen time in the model and portray the effect on the children's health and other factors that are important, which also works as a decision support tool.

**Keywords :** children, causal model, screen time, systems engineering, system dynamics

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