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# CIA-based Analysis for E-Learning Systems Threats and Countermeasures in Malaysian Higher Education: Review Paper

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## Abstract

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## Abstract

In Malaysia, the early days of e-learning implementations can be traced back to the late 1990s. However, the development and use of such systems are fraught with security issues, concerns about the security of personal data, and content-related security flaws, confidentiality, integrity, availability,

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authentication, and deliberate attacks are the list of security issues that are identified in the e-learning systems. More attention has been given to course creation and delivery and technology adoption. However, user privacy and security in the context of e-learning security have not been studied well. In this paper, an in-depth review has been conducted regarding security threats and their remedies to the e-learning systems, which consequently lead Malaysia's higher education to take precautionary measures to facilitate learners with a secure learning environment. © 2023 IEEE.



#### Author keywords

countermeasures techniques; E-learning Systems; Malaysia higher education; Security threats

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