

Attention in the Digital Age

Educational Issues

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Educational Trends in Digital Age

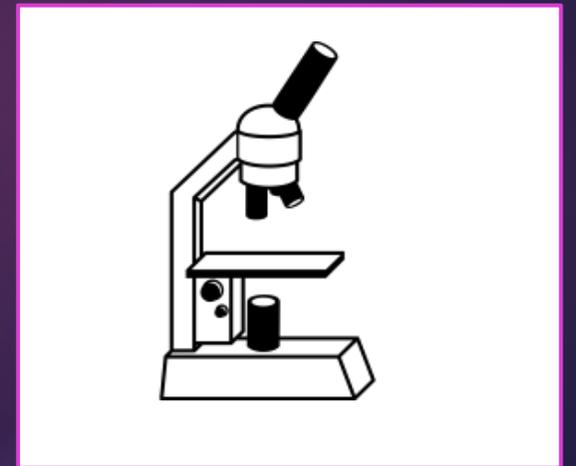
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- ▶ Context awareness learning
- ▶ Collaborative learning
- ▶ Ubiquitous learning
- ▶ E-learning
- ▶ Mobile-learning
- ▶ Online learning
- ▶ Digital game-based learning
- ▶ Cloud-based virtual learning
- ▶ MOOCs



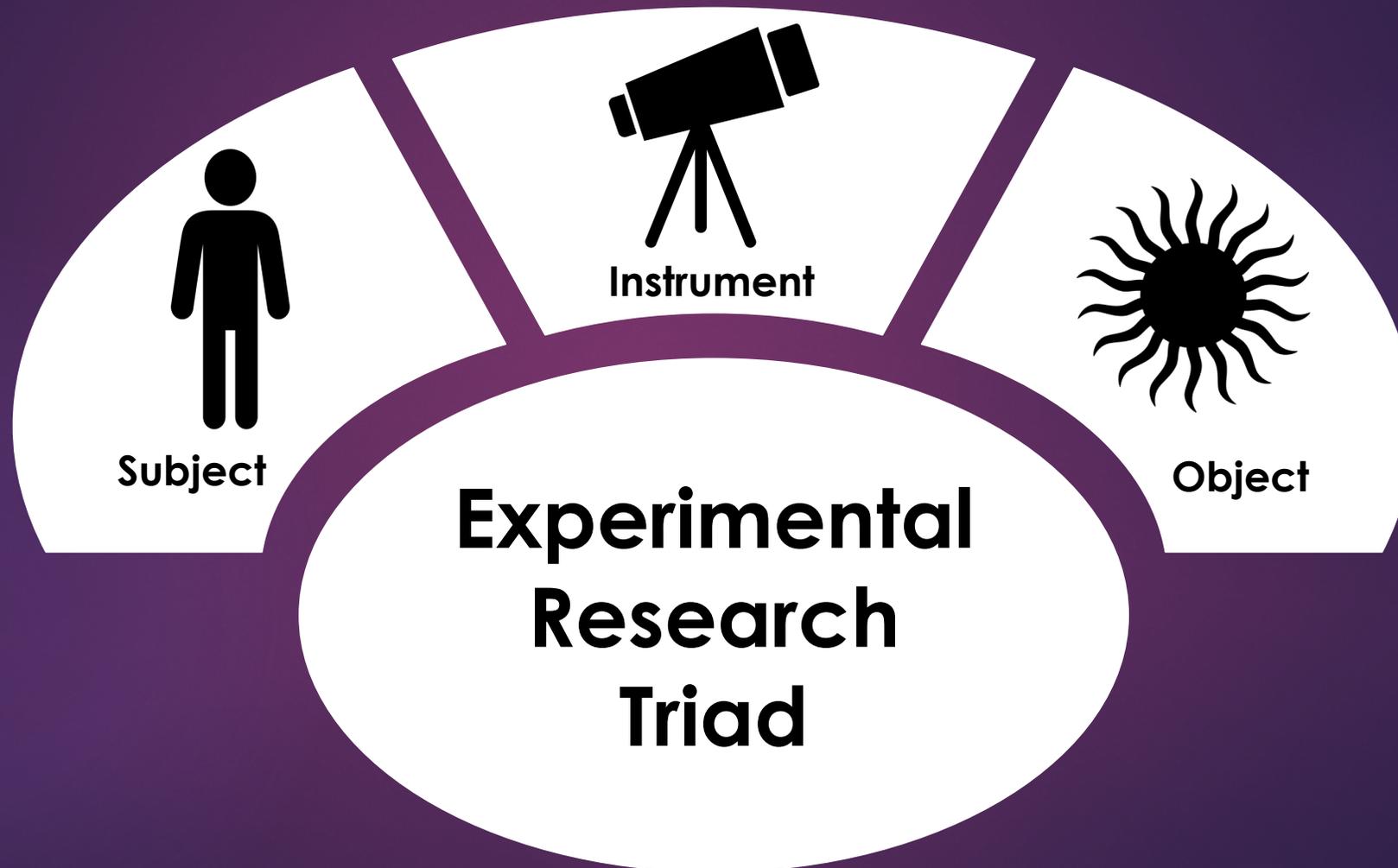
Inquiry-Based Science Learning

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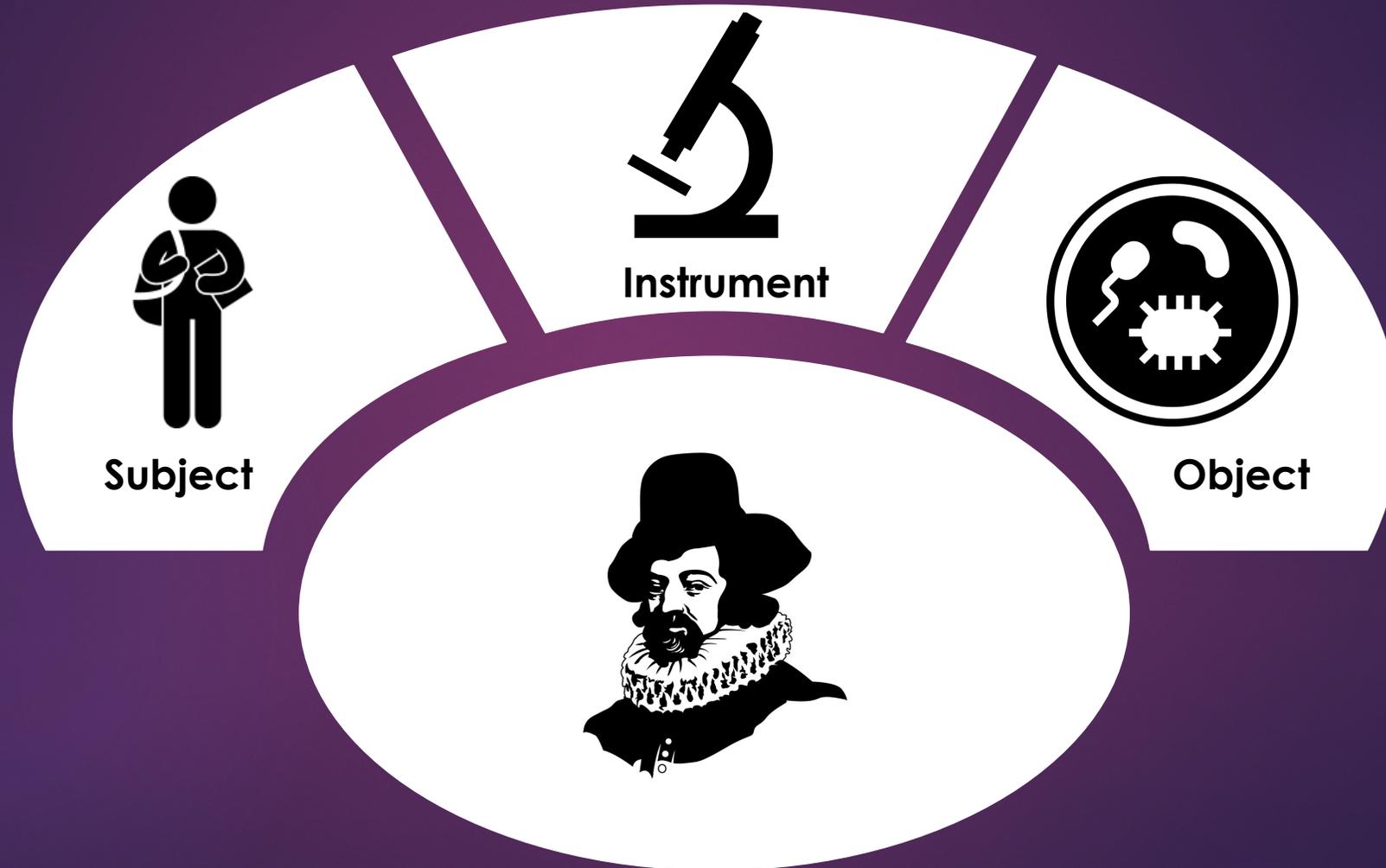
Experimental Research Triad

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Experimental Triad in Pre-digital Class

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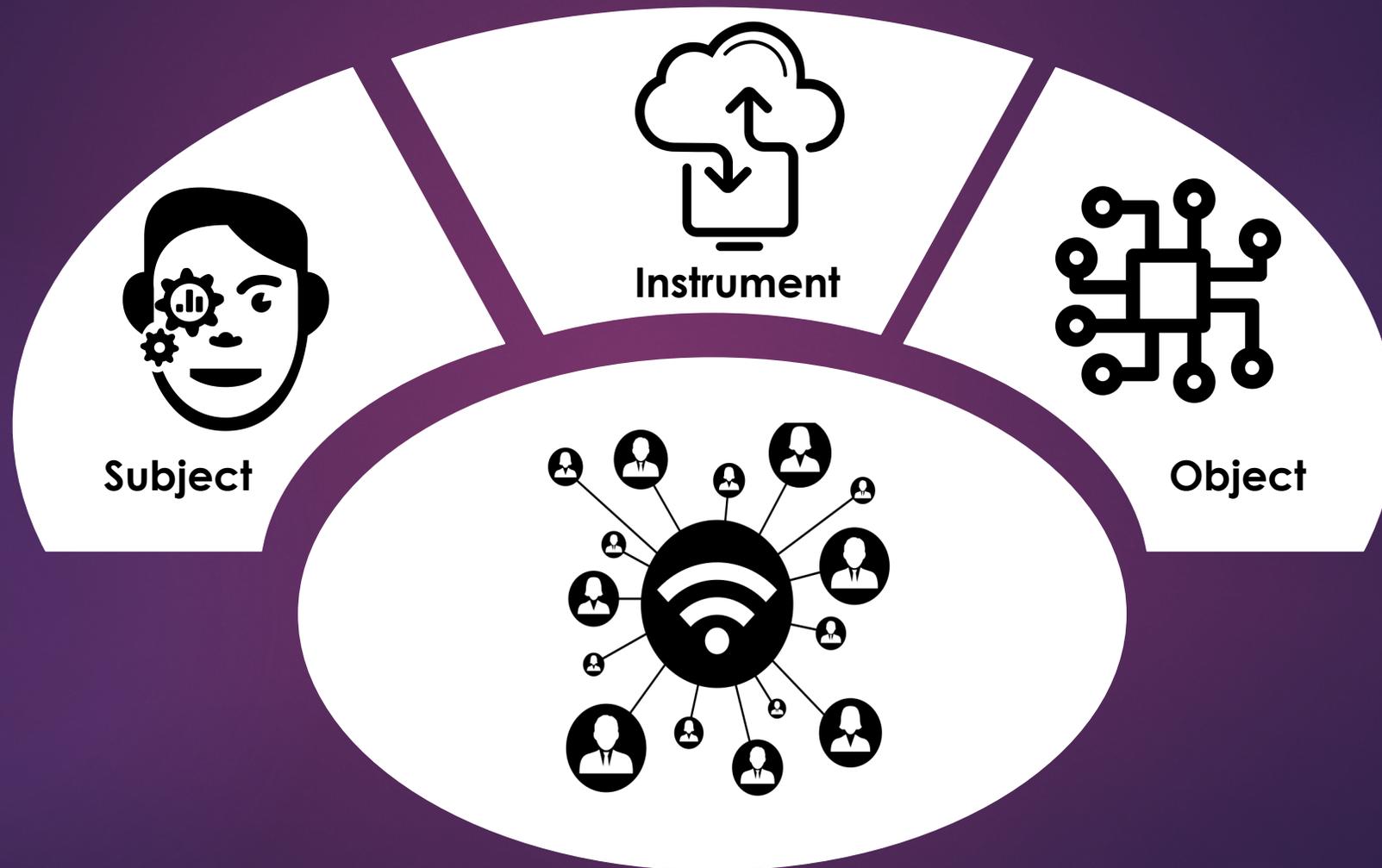
Experimental Triad in Pre-digital Class

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Research Subject	Instrument of Research	Object of Research
Student who uses instruments for experimentations	Experimental facilities based on analogous transformation of energy	Natural objects or phenomena

Experimental Triad in Digital Class

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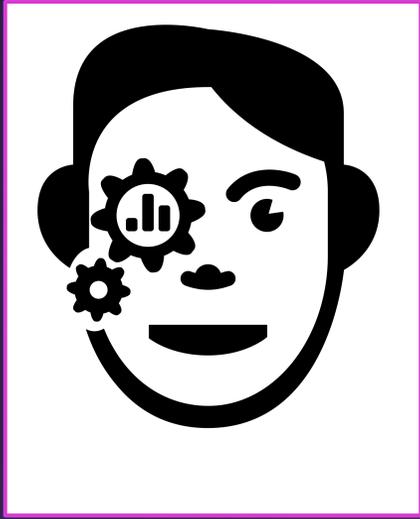


Experimental Triad in Digital Class

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Research Subject	Instrument of Research	Object of Research
Hyper-connected Student	Instruments based on mobile and wearable technologies	Hybrid Cyber-Physical Systems

Networked Student



Collaboration and data exchanges with other students/teacher/professionals

Split attention / divided attention

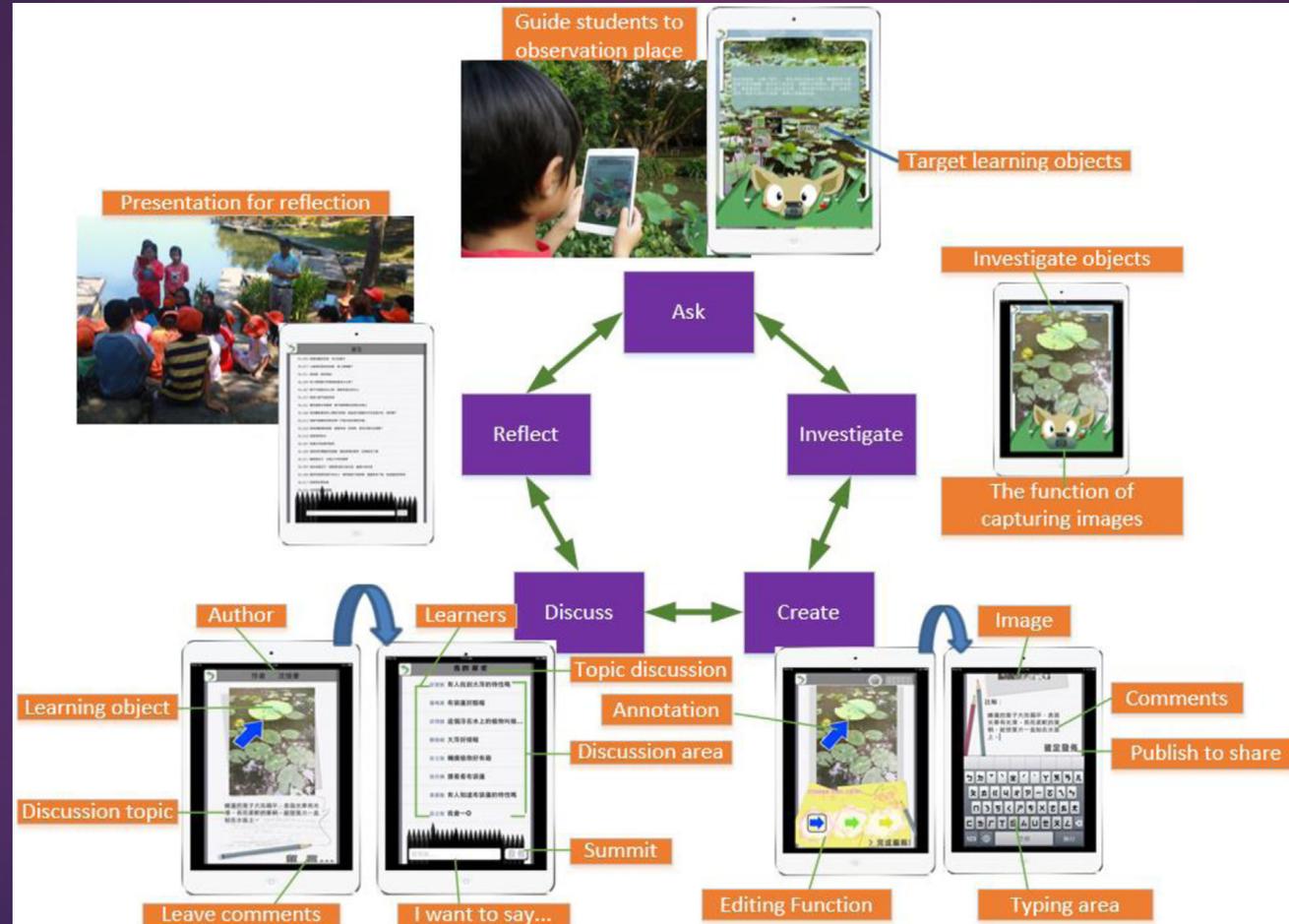
Joint Attention

Hyper attention



Northern Taiwan Augmented Reality Based Learning Project

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An example of a new research subject

Digital Instruments

Instruments based on mobile and wearable technologies include virtual and real components



Moving from
spotlight
attention paradigm
to ...?



gPhysics – Google Glass for Wearable - Technology Enhanced Learning

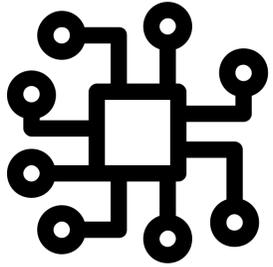
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An example of a
new research
instrument

Hybrid Object

Cyber-Physical Systems
'Enchanted Objects''



Dimensional Selective
Attention

Spatial Attention



Connected Gardening Project

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An example of a
new research
object

Zuiker and Wright, 2015

Conclusions

- The subject-instrument-object triad is the core foundation of inquiry-based science learning
- The digital triad is different from the classical triad of the pre-digital epoch
- Each component of the digital triad is enriched by:
 - ❖ Intensive communication as a feature of the research subject
 - ❖ Virtualization as a feature of the research instrument
 - ❖ The hybrid features of the emerging research objects
- Digital triad invites emerging directions in attention's study

Thanks!

