

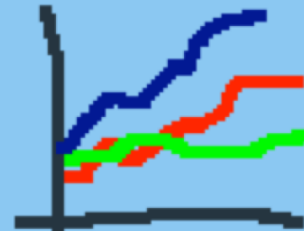
Learning Analytics

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WELCOME!



Problems in Learning Environments

- Large class sizes
- Lack individual and immediate support
- A single learning path (and pace)
- ...
- What doesn't work for you?

Problems in Learning Environments

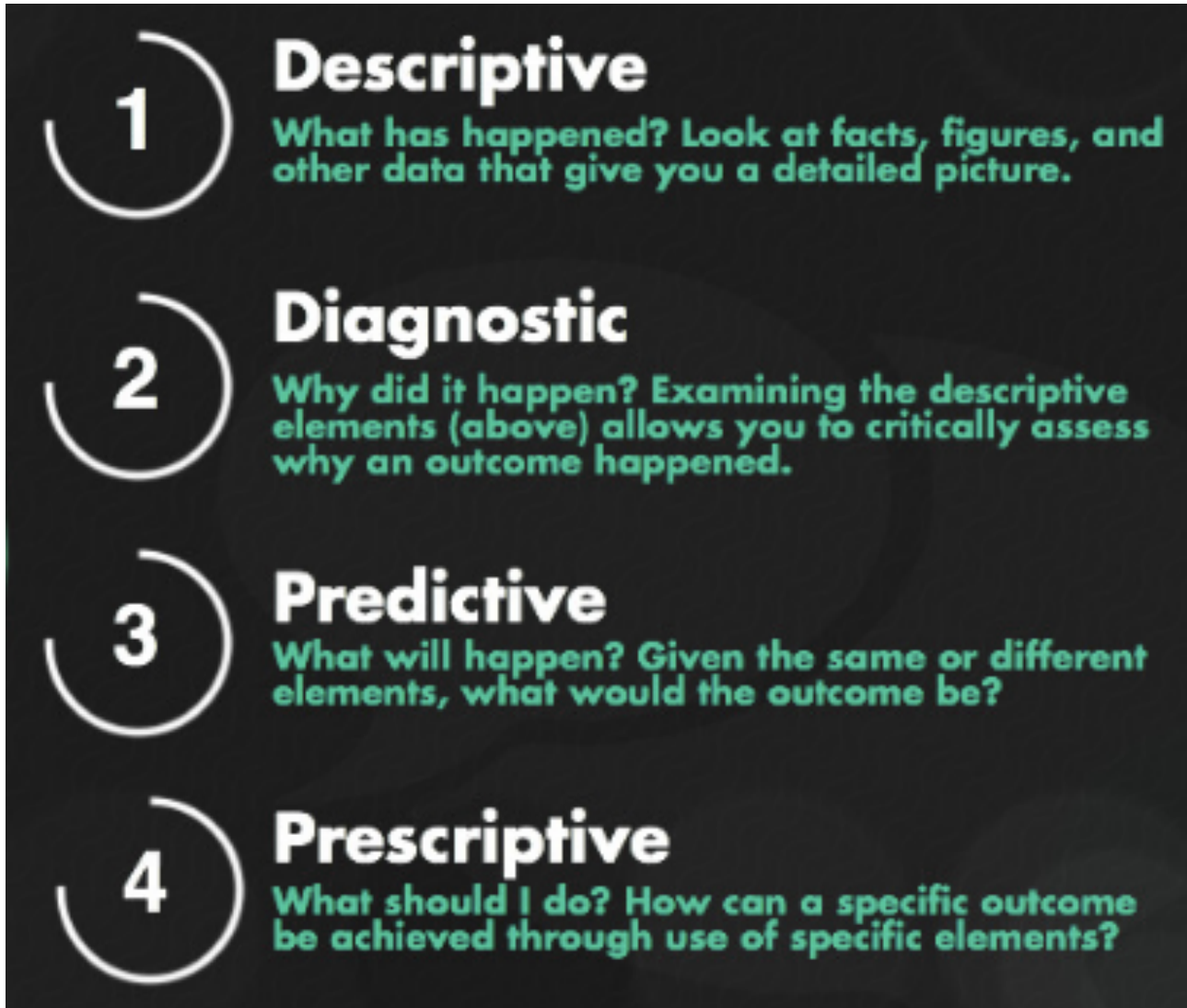
In summary:

“Can’t always learn what I want to learn,
when I want to learn, and
how I want to learn it”

What is Learning Analytics?

- Using data to provide insights on a learning environment or a student's learning process
 - Help **students** identify learning needs by using gathered data as evidence
 - Help **instructors** use data to make pedagogical decisions
 - Help **administrators** see the patterns and (in)efficiencies in the ecosystem

Levels of Analytics



Modeling Domains

- Modeling knowledge domains, scaffolding, automated hints
- Example applications:
 - Automated assessment generation
 - Natural language processing
 - Problem structure, learning support, feedback
 - Instructional design
 - Content management
 - Ontology development

Modeling Users

- Modeling user knowledge, behaviour, experience
- Example applications:
 - User profile development
 - Learner modeling
 - Behaviour modeling
 - Social network analysis

Trends Analysis and Prediction

- Monitoring user activity and performance over time
- Example applications:
 - Changes in learner behaviour
 - Early warning risk identification
 - Measuring impact of interventions
 - Identification of error propagation

Personalization/Adaptive Environment

- Tailoring time, place, content, delivery mode, assessment type
- Example applications:
 - Preference elicitation
 - Recommendations of content
 - Recommendations of social connections
 - Reminder systems

About this Course

- Review syllabus
 - See: evaluation criteria
- Tentative schedule
 - Weekly readings
 - Biweekly assignments
 - Tentative topics and optional topics
 - Quiz dates
 - Project
 - Final exam (treated as a quiz)