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# A New Teaching Partnership: Humans and Pedagogical Agents in Online Classes

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## A world Pandemic

# COVID 19

### Pros:

- Increased number of online courses
- Synchronous teaching and learning
- Students in multiple locations
- Challenged traditional roles
- Allowed greater social interaction
- Increased response time

### Cons:

- Replicated the classroom
- Focused on time and place
- Maintaining engagement and interactions



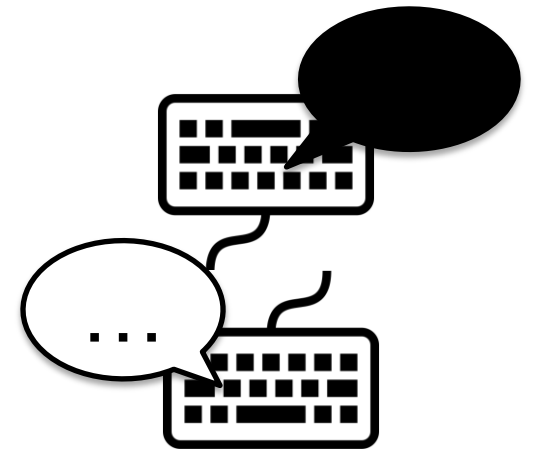


# THE QUALITY CHALLENGE

HOW TO MAINTAIN INTERACTION ,

INSTRUCTIONAL EFFECTIVENESS

REDUCE ATTRITION IN LARGE ONLINE  
CLASSES.





## **What is Large in an Online Course?**

**Optimal Class Size = not to exceed 14 participants**

**Large Class Size = 15-30 participants**

**Very Large Size = 30 participants**

**Size does Matter**



# What do Students Want

1. Timely Feedback
2. Interaction with instructor and peers.
3. Being aware of due dates and expectation
4. Consistent structure
5. Timely response to questions and emails



**Instructor Issues .**

ADMINISTRATIVE  
TASKS

TEACHING  
PRESENCE

SUPPORTIVE  
LEARNING  
ENVIRONMENT

MEANINGFUL  
FEEDBACK



# IS THIS YOUR DIGITAL CLASSROOM

- Decreasing student interest in content
  - Lack of interaction among students
  - Frustration with instructor feedback
- Instructor Presence







**Your pedagogical Agent**



# Pedagogical Agent

## Agent

A computer program with autonomy, social ability, reactivity and proactiveness. (Wooldridge & Jennings, 1994).

## Pedagogical Agent

Inhabits a learning space, monitors dynamics of educational transaction, and operates on behalf of instructors with autonomy such as responding to teaching /learning incidents. May have human like features.( Johnson & Rickel, 1997)

Can great learners, post announcements answer routine questions (Goel and Polepeddi (2016)



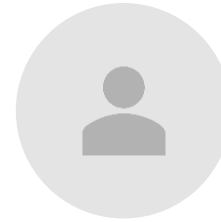
HUMAN AI  
PARTNERSHIP



RESPONDING TO  
ROUTINE  
INQUIRES



PERSONALIZED  
COGNITIVE  
SUPPORT



PERSONALIZED  
SOCIAL SUPPORT



SUPPORT  
INSTRUCTOR  
DECISION MAKING



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# A Partner for Tomorrow

Assigned an agent with voice and human features

Tracking students emotional and cognitive levels

Evolves and learns ways to create worthwhile learning sessions

Supports instructor decision making

**Tomorrow is here !**

**welcome your pedagogical agent as a partner in online instruction!**

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