

PEDAGOGICAL IMPACT OF THE MULTIMEDIA ENHANCED ELECTRONIC TEACHING SYSTEM (MEETS) ON THE DELIVERY OF ENGINEERING COURSES

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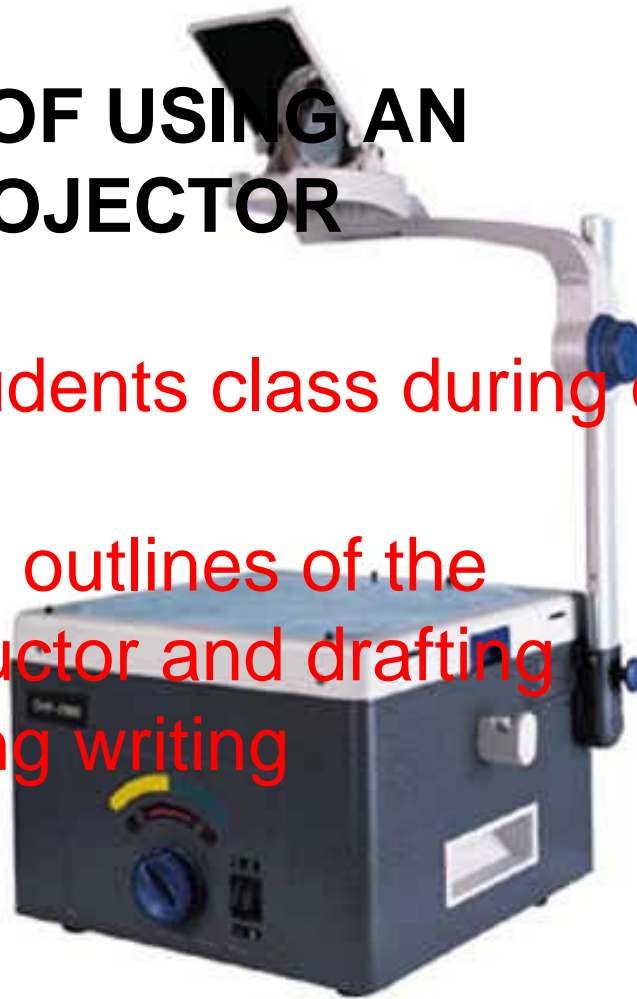
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ADVANTAGES OF USING AN OVERHEAD PROJECTOR

lecturer faces students class during class

students can see outlines of the hand of the instructor and drafting instruments during writing



Overhead Projector

Survey in 2007

*Do you want the instructor to
continue to write out lecture notes?*

YES!



ACTIVE LEARNING: Creating Excitement in the Classroom

Bonwell, C.C. and Eison, J.A. (1991)

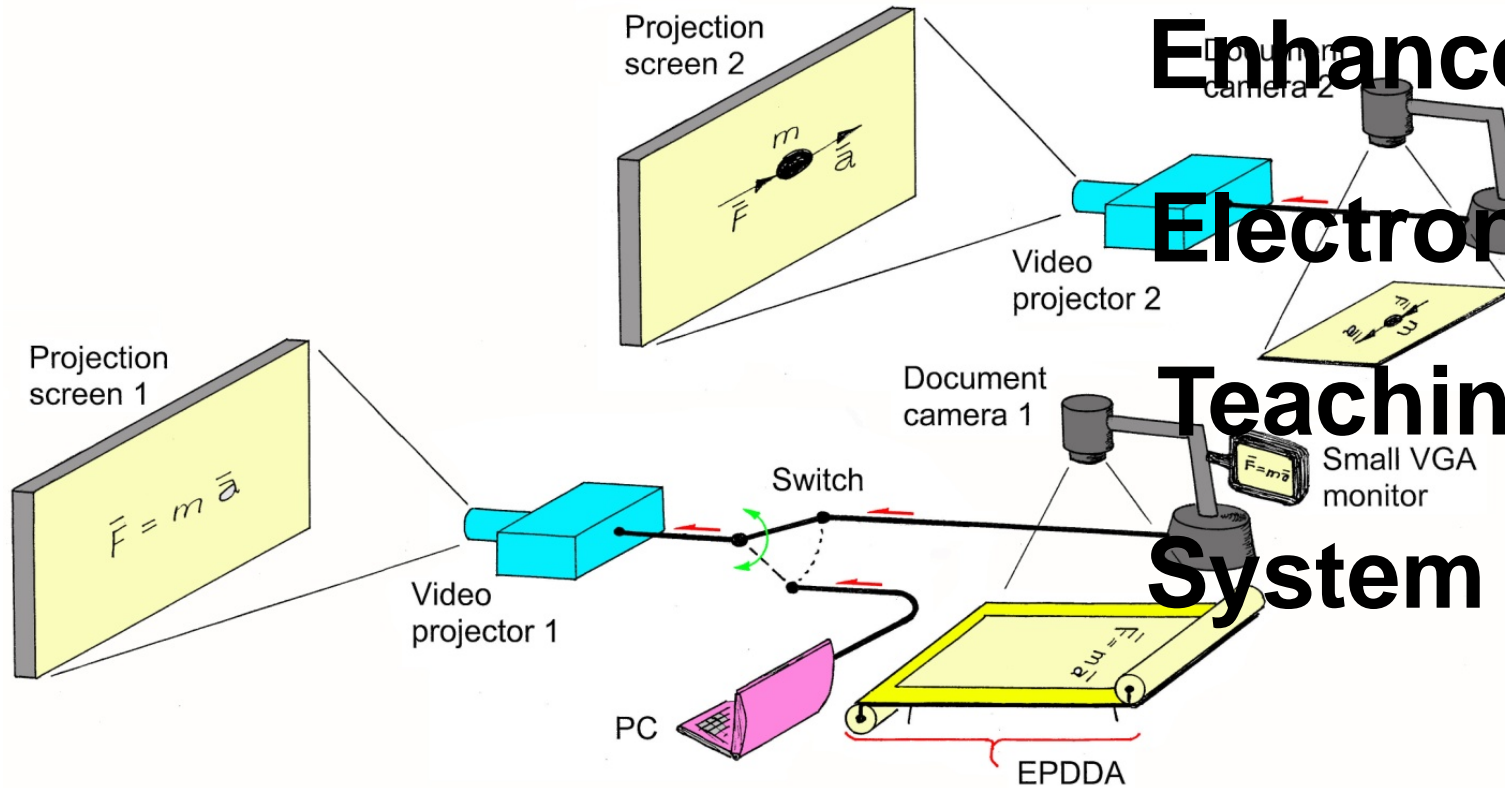
in-class writing is productive and ensures the students are thinking about the notes they are taking during lectures¹

¹ ASHE-ERIC Higher Education Report No. 1. The George Washington University, School of Education and Human Development, Washington, DC.

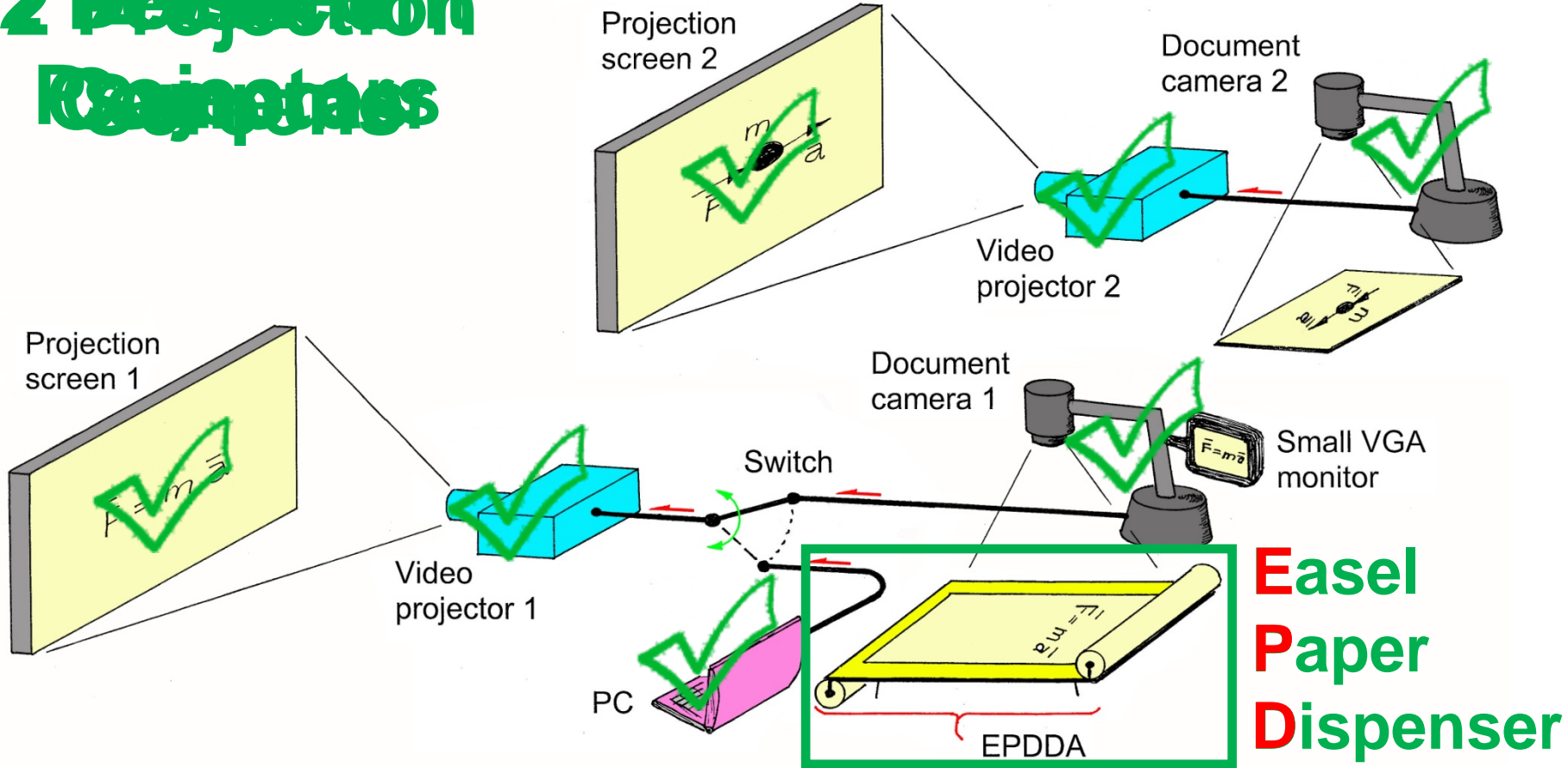


Multimedia

Enhanced Electronic Teaching System



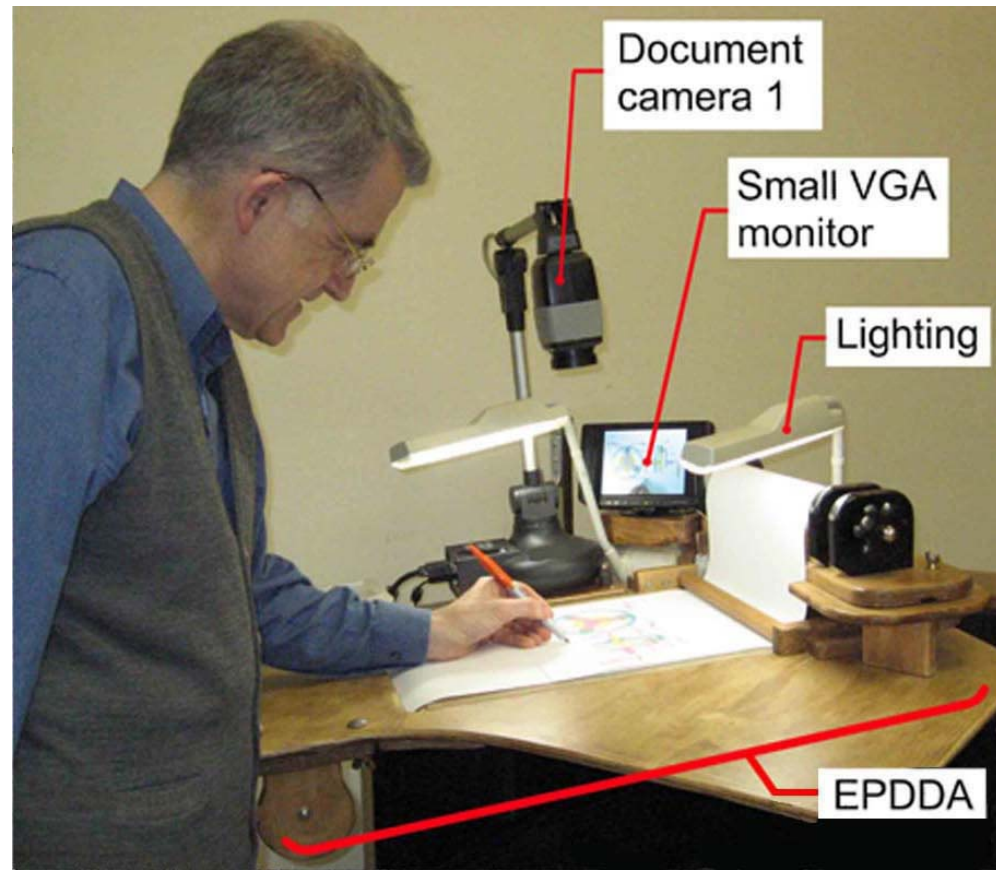
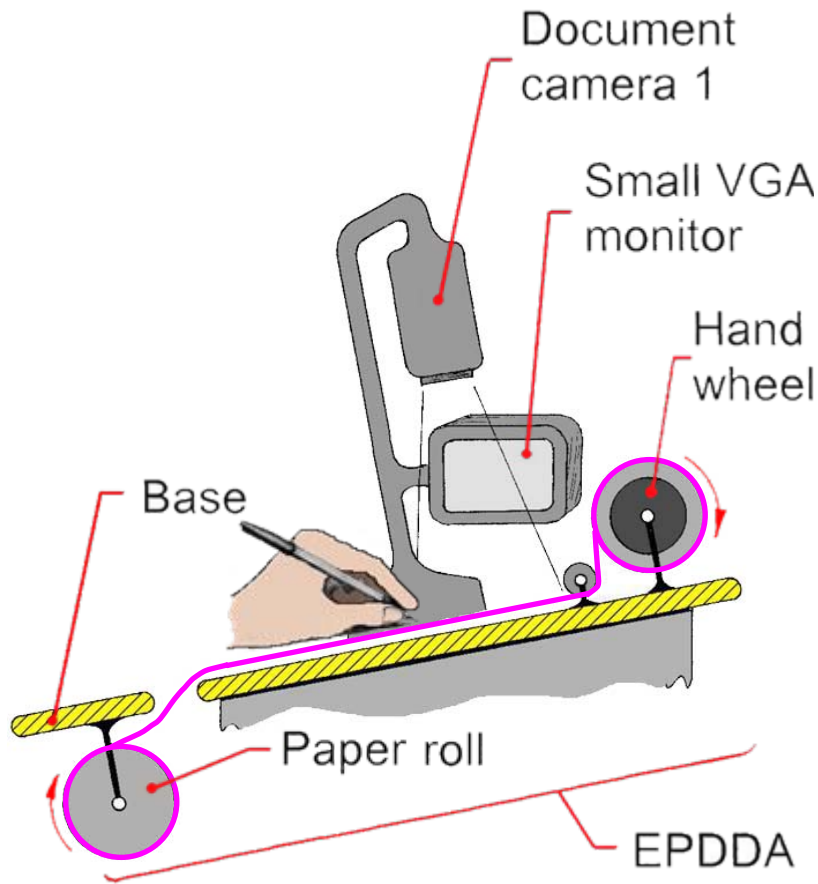
2 Projection Computers



**Easel
Paper
Dispenser
Display
Adapter**

MEETS





Schematic of the EPDDA

The EPDDA in Use





Transmission Design by Dinghui EPDDA

Example - Manual Transmission

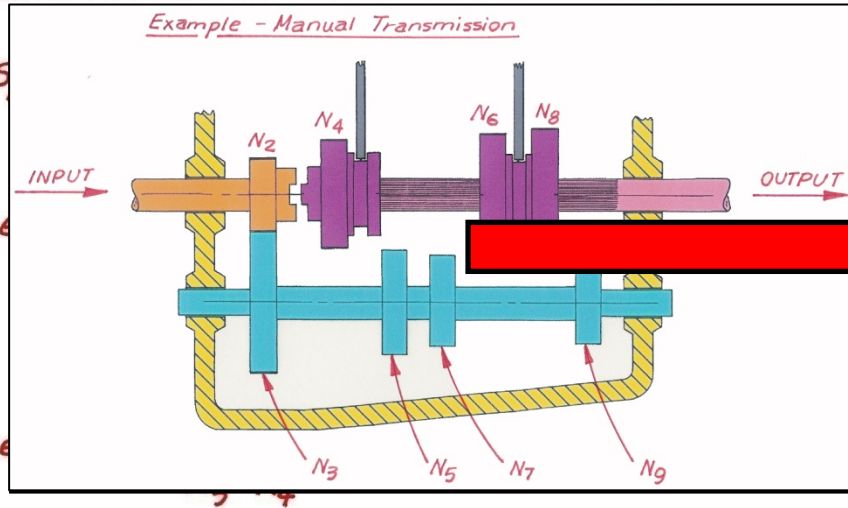


Image on Projection Screen 1 (EPDDA)

Image on Projection Screen 2

Typical Images Shown on the Projection Screens



Projected Image

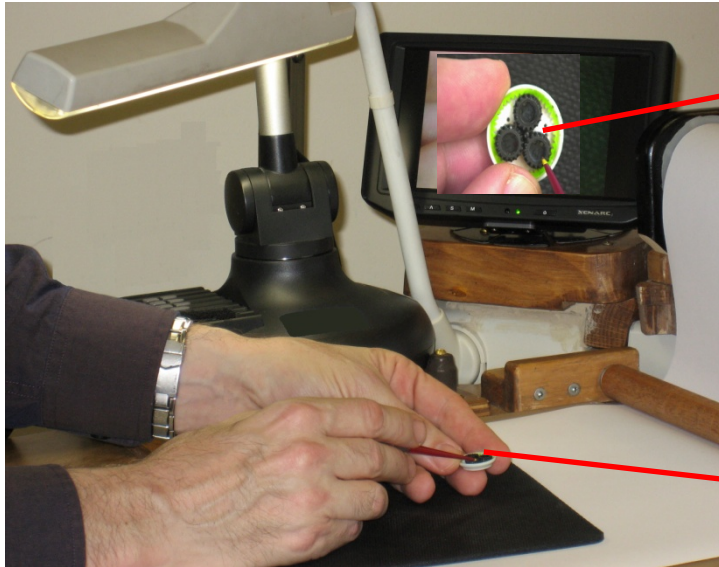
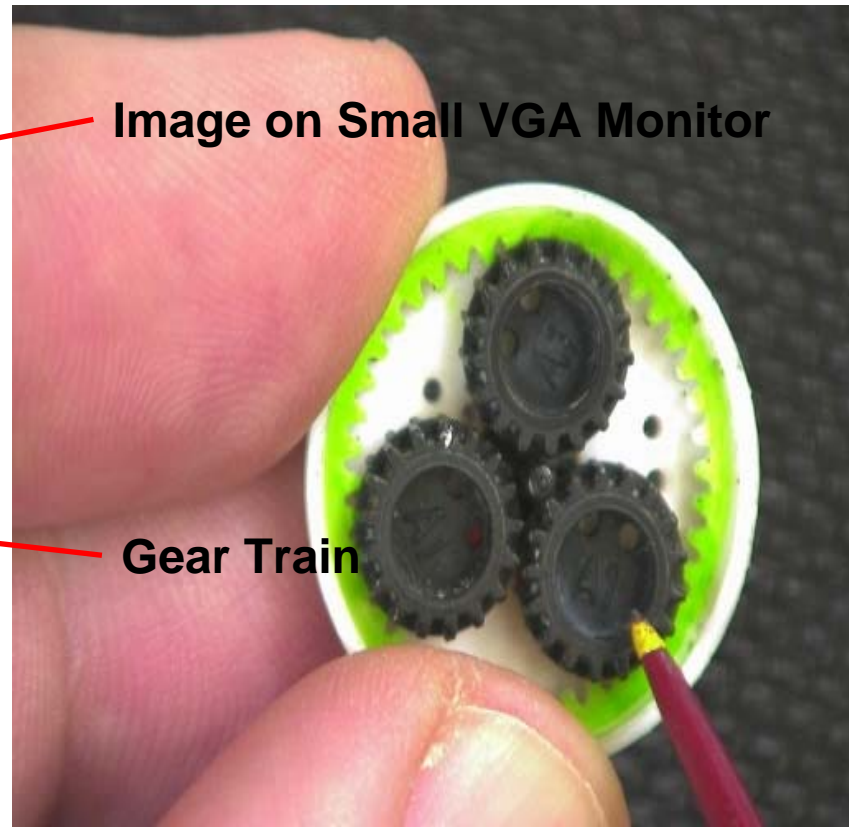


Image on Small VGA Monitor

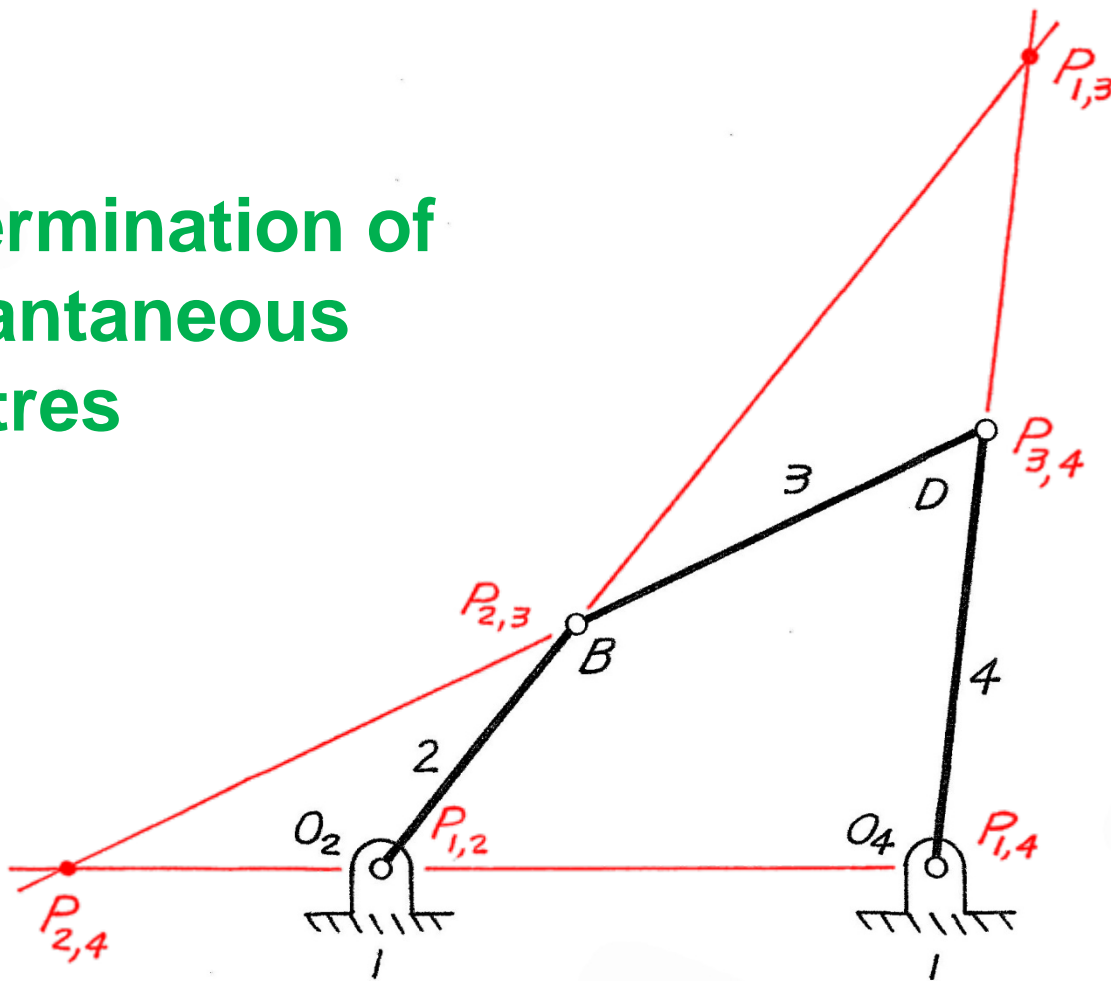


Gear Train

Demonstration of a Gear Train

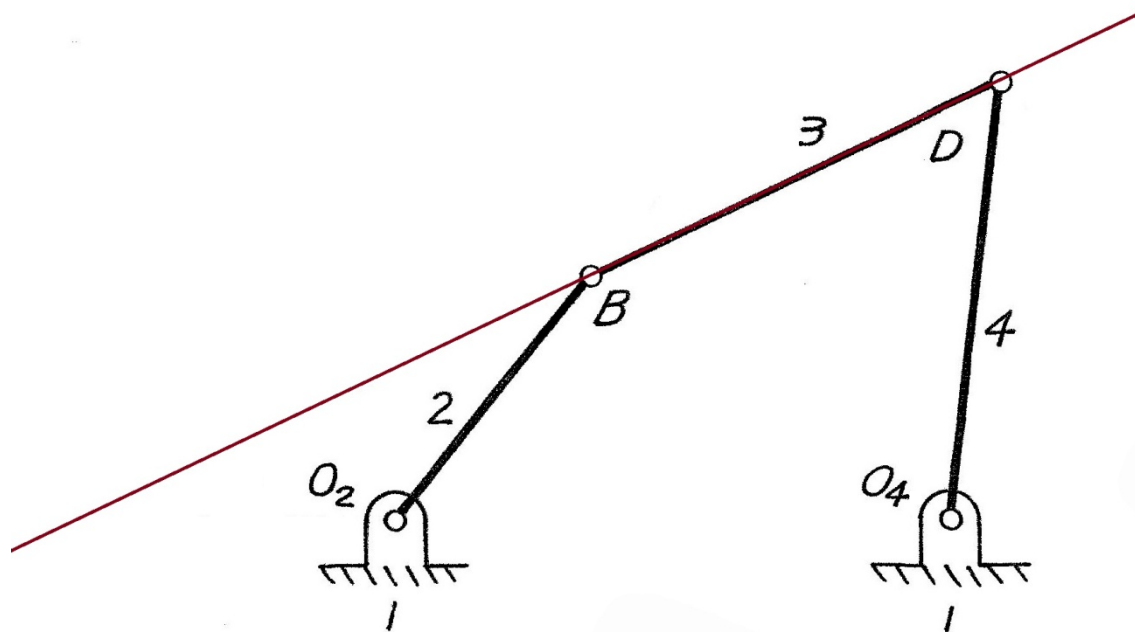


Determination of Instantaneous Centres

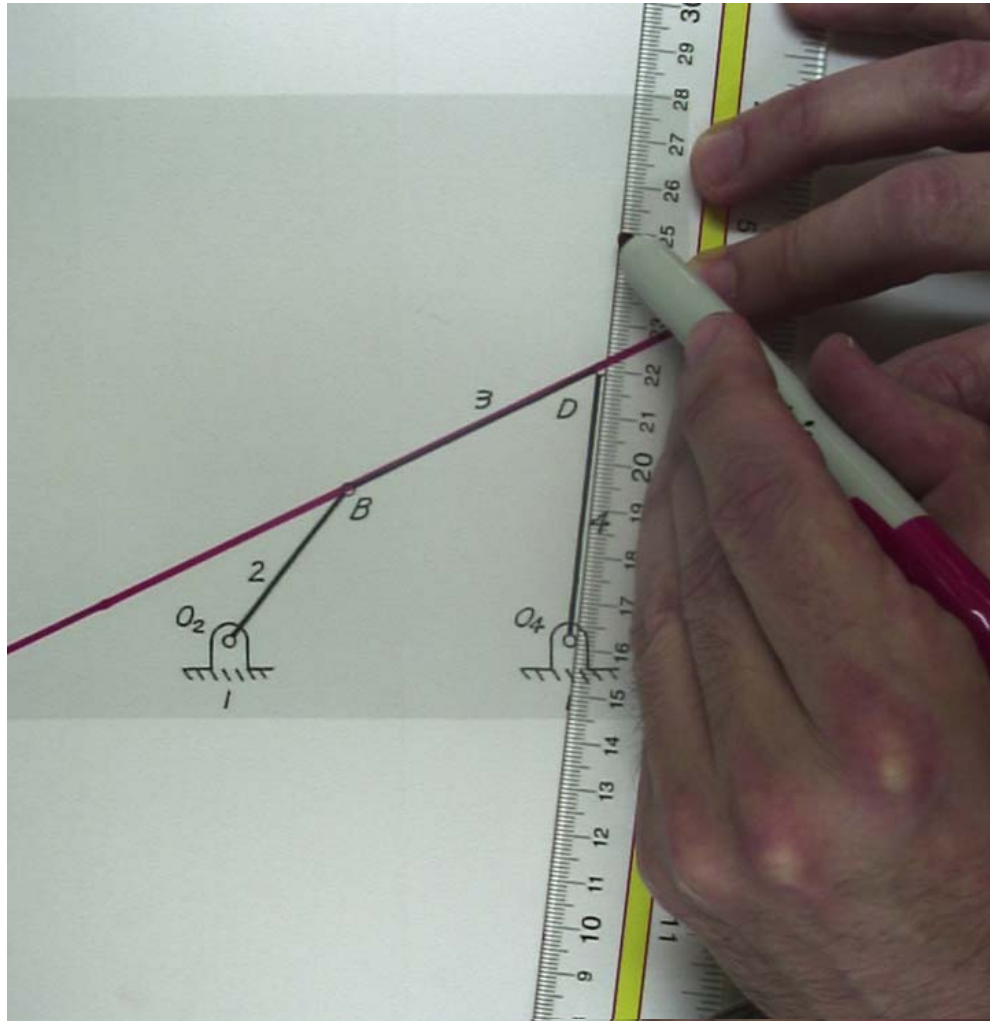


Four-Bar Mechanism

Graphical Demo Using a Tablet PC



Graphical Demo Using the MEETS



ADVANTAGES OF THE EPDDA vs A TABLET PC

images of the hand of the instructor, along with the ink markers and drafting devices, appear during writing or graphical constructions

demonstrate physical mechanical components to large classes

comfortably write lecture notes with the accustomed feel of ink markers and paper



SUMMARY

MEETS was successfully employed in the teaching a large undergraduate course on mechanics



STUDENT FEEDBACK

"... helped students to clearly follow the lecture material by showing the actual hand of the instructor writing the material on paper"

"... enhanced the quality of communication... "

"... made it easier for students to understand the instructor's writing, especially on annotated diagrams"



FUTURE PLAN

record complete lectures
with the **MEETS**, and publish
to Engineering course websites



Q&A

MEETS website:

<http://sites.google.com/site/meetswebsite>

