

27TH
AUG WED 2015

THE

RISE OF VR+AR IN MEDICAL ED.



DYNAMIC ANATOMY SPEAKER:

STUDENTS LEARN
PRIMARILY FROM 2D,
BUT THEN THEY
MEET PATIENTS IN 3D!



VR = STAND ALONE DEVICES
HIGHER FIDELITY
~ \$500 +
USUALLY TETHERED
30-50° DEGREES

AR = TYPICALLY NOT TETHERED
> \$2500 +
100-120° DEGREES
NATURAL ENVIRONMENT

MR = INTERACTING WITH
HOLOGRAM
(MIXED REALITY) (e.g. HOLOLENS)



⚠️ SOME STUDENTS c/o
CYBER SICKNESS WITH
AR + VR

↳ MOTION DISRUPTION
+ HEADACHES

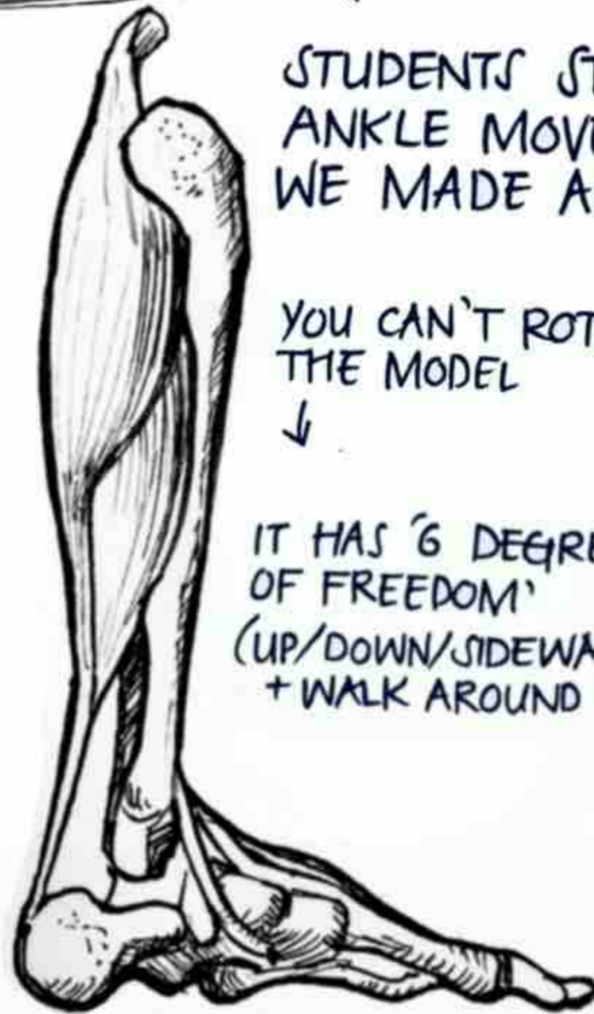
THE WHOLE SPECTRUM = X-REALITY
'XR'

STUDENTS STRUGGLE WITH
ANKLE MOVEMENTS, SO
WE MADE AN APP

YOU CAN'T ROTATE
THE MODEL

← YOU HAVE
TO WALK AROUND
IT, WE CALL IT
'ACTIVE LEARNING!'

↓
IT HAS '6 DEGREES
OF FREEDOM'
(UP/DOWN/SIDEWAYS)
+ WALK AROUND



IN A STUDY (RCT) USING THIS
MODEL IN 3D (VR) + 2D (SCREEN)
STUDENTS WITH LOWER SPATIAL
ABILITY USING 3D ON 2D SCREEN
DID WORSE IN ASSESSMENTS!

⚠️ WATCH OUT, IT'S NOT
USEFUL FOR EVERY STUDENT

JAMES PICKERING (DEVIL'S ADVOCATE)
LEEDS UNI

A FEW YEARS AGO
3D TV'S WERE THE
RAGE....



YET WE HAVE LIBRARIES
OF BOOKS & NO ONE
HAS A 3D TV!



WE WERE TOLD IPADS +
KINDLES WOULD RENDER
BOOKS OBSOLETE...

THERE ARE CONTRASTING
VIEWS...



WE ARE NOT 'DIGITAL NATIVES'
JUST BECAUSE A STUDENT WEARS
HEADPHONES DOESN'T MEAN
THEY CAN USE VR/AR TO ENHANCE
THEIR EDUCATION!

SOME ARTICLES ARE USED TO
JUSTIFY THE INCLUSION OF NEW
TECHNOLOGIES IN MEDICAL
EDUCATION...

DID SOMEONE FROM M****SOFT
WRITE THIS?

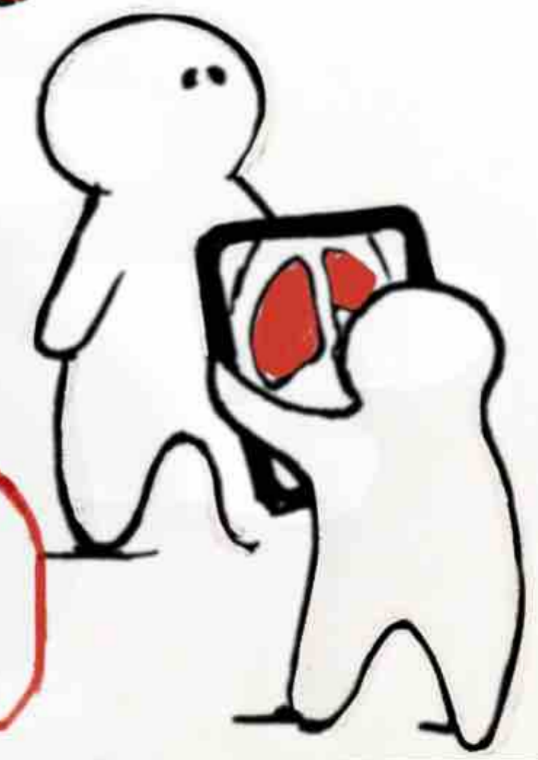


DOES IT NEED
TO CHANGE
EVERYTHING?



SOME STUDIES ARE +VE
OTHERS FIND THERE NO BENEFIT OF VR/AR
OR THAT'S IT'S DETRIMENTAL!

YES STUDENTS ENJOY IT, BUT THAT DOESN'T
CONFIRM THEY'VE LEARNED MORE!
IT'S MORE COMPLICATED THAN THAT!



SO... VR OR DR?

WHATEVER! JUST ENSURE IT'S
PEDAGOGICAL APPROPRIATE AND
EVIDENCE INFORMED

