Empowering H5P Interactive Content Features (Branching Scenario and 360 Virtual Tour) to Create Virtual Simulation in Medical Education

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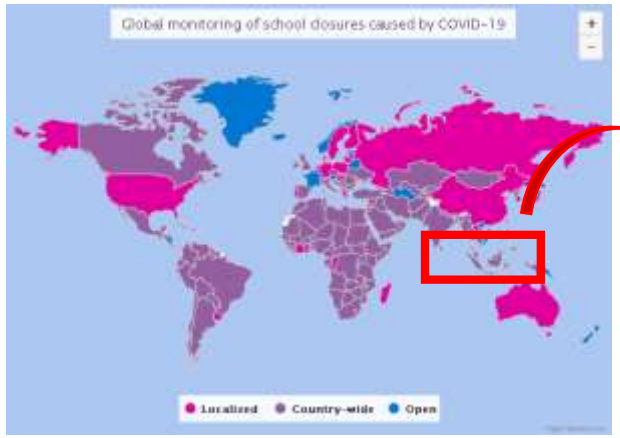
Tujuan Pembelajaran:

- Memahami pemanfaatan Fitur H5P Branching Scenario dan Virtual Tour 360
- Dapat membuat konten interaktif H5P Branching Scenario dan Virtual Tour 360

Pendidikan Kedokteran Saat ini

Akibat Pandemi COVID-19 hampir sebagian besar institusi pendidikan tutup sementara demi mencegah penyebaran COVID-19



https://en.unesco.org/covid19/educationresponse

Menteri Pendidikan dan Kebudayaan RI menerbitkan edaran bertanggal 24 Maret 2020 yang mengatur pelaksanaan pendidikan pada masa darurat penyebaran coronavirus melalui kebijakan "**Belajar di Rumah**".

Inovasi Terkini di Pendidikan Tinggi khususnya di kedokteran

Kendala Pembelajaran Daring?

Virtual Simulation?

"Virtual simulation (VS) also referred to as computer-simulation is a broad term applicable to a variety of partially and fully immersive digital technologies that display case studies on a computer screen or smart phone." (Cant, R., Ryan, C., 2022)

- Virtual Simulation
  - Screen-based Simulation (Non-immersive)
    - Virtual World
    - Virtual Gaming Simulation/ Virtual Patient
  - Extended Reality (Immersive)
    - Augmented Reality (AR)
    - Virtual Reality (VR)
    - Mix Reality (MR)

Sorrorwoot Chaiyawong / EyeEm

Modifikasi dari Verkuyl et al. (2022)

Manfaat Penggunaan Virtual Simulasi dalam Pendidikan Kedokteran

Expose medical students in ethically safe environments without risk of jeopardizing real patients/animals

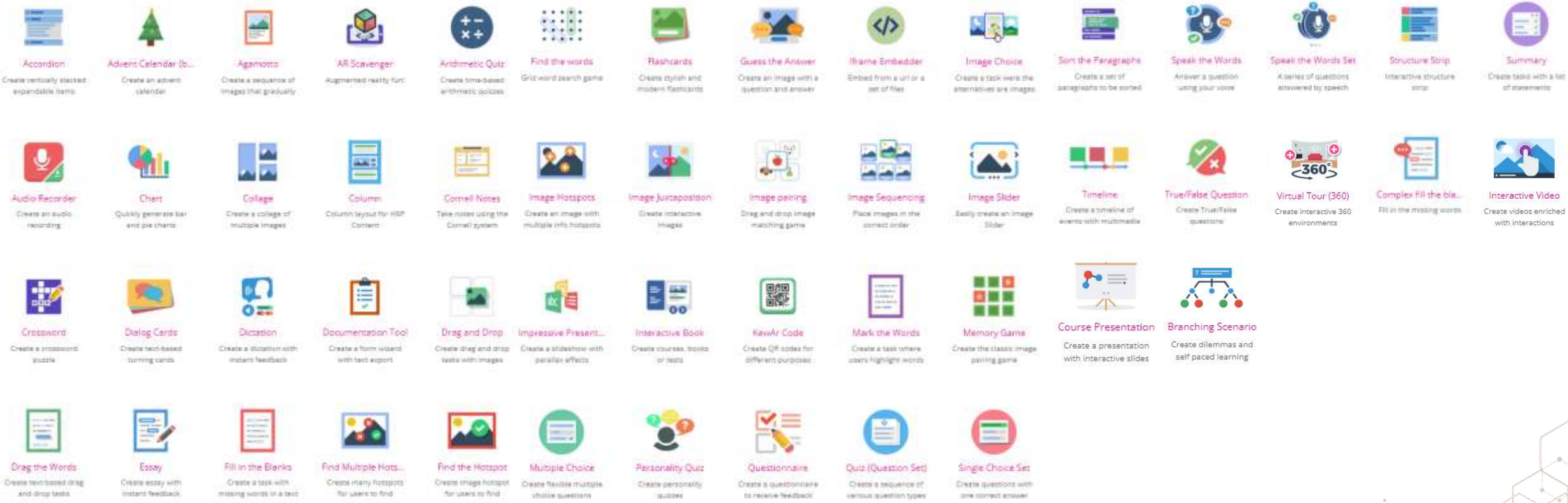
Accessibility to educational content from anywhere at any time

Developing professional knowledge, critical thinking skills, comprehensive decision-making skills, and clinical judgment.

Filled gaps in their learning

Improve learning outcome

H5P Features



H5P Features

Course Presentation

Create a presentation with interactive slides

Branching Scenario

Create dilemmas and self paced learning

Virtual Tour (360)

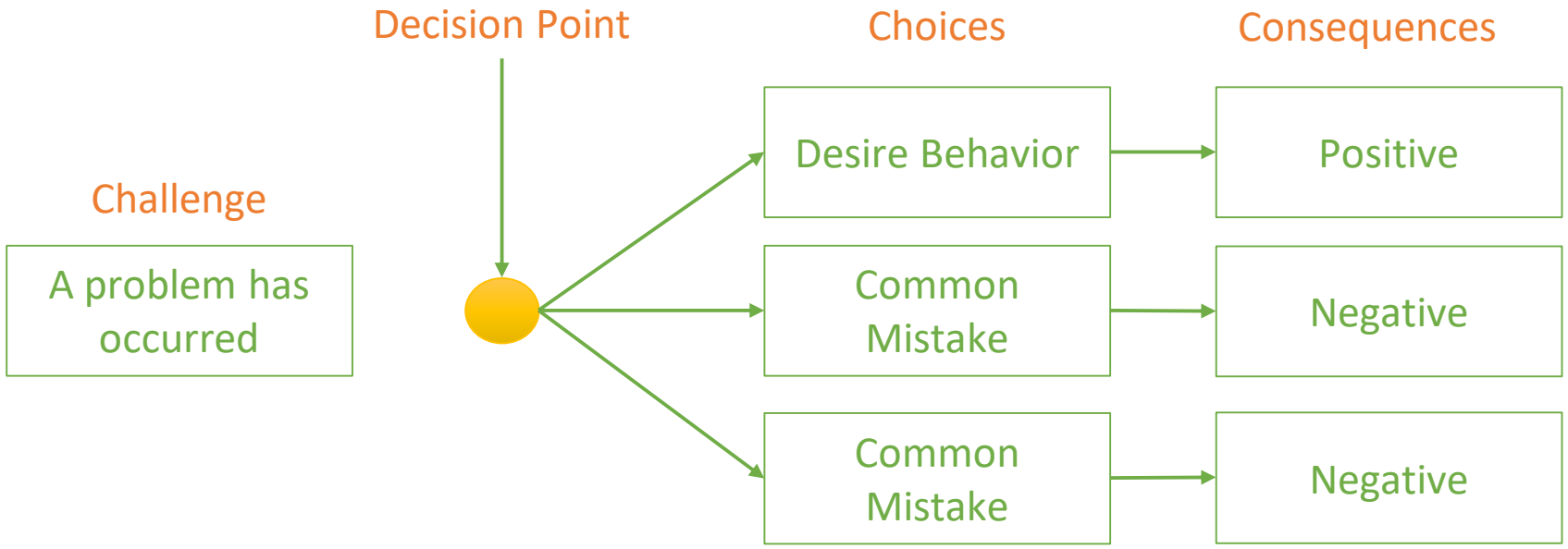
Create interactive 360 environments

Interactive Video

Create videos enriched with interactions

H5P Branching Scenario

Branching Scenario



Fitur Umum H5P Branching Scenario

Fitur Umum:

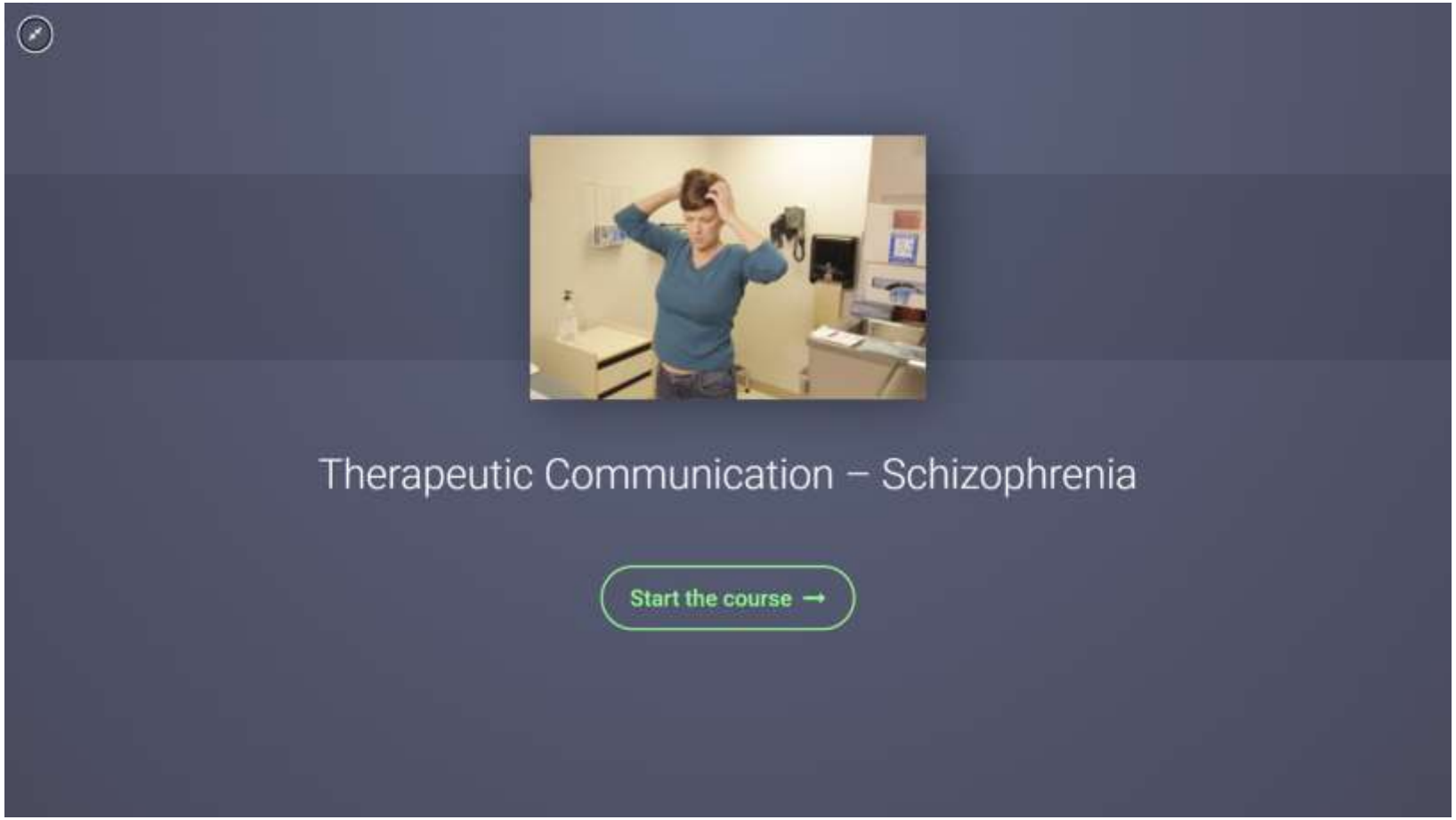
1. Skor dapat diatur pada tiap akhir skenario atau berdasarkan poin yang dikumpulkan untuk masing-masing jalur pembelajaran yang dilalui.
2. Masing-masing percabangan dan akhir dari skenario dapat diatur untuk memiliki *feedback* dan skor berbeda.
3. Pilihan dapat diatur untuk mengarah ke simpul lain dalam struktur pohon interaktivitas.

Jenis H5P yang dapat ditambahkan:

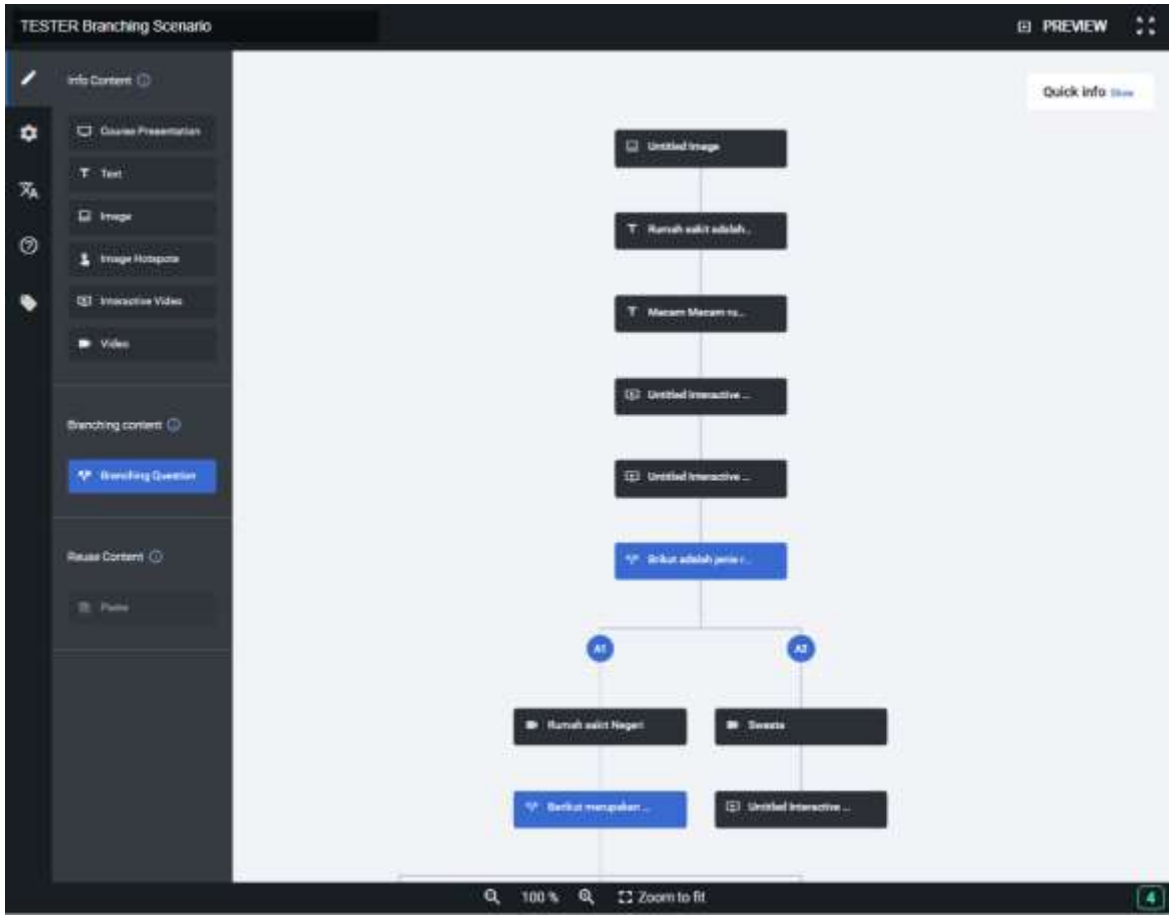
1. Course Presentation
2. Text
3. Image

1. Image Hotspots
2. Interactive Video

Contoh Branching Scenario di Kedokteran



Fitur-fitur H5P Branching Scenario



H5P Virtual Tour 360º

Mari Kita Coba Bandingkan

https://bit.ly/VirtualTourIMERI

https://bit.ly/DemoVirtualTour3DVista

Perbandingan 360 Software Editor

Perbandingan	H5P di Moodle	H5P di Web www.h5p.org	3D Vista
Biaya	Gratis	Gratis	Free Trial Full Access (Berbayar)
Format Lingkungan Virtual	Hanya Gambar (360)	Hanya Gambar (360)	Gambar dan Video (360)
Perpindahan antar ruangan	Kurang smooth (ada loading page)	Kurang smooth (ada loading page)	Cukup smooth
Navigasi (Rotasi 360°)	Ya	Ya	Ya
Interaktivitas	1. Pertanyaan 2. Hotspot (Teks, Gambar, dan Video)	1. Pertanyaan 2. Hotspot (Teks, Gambar, dan Video)	1. Pertanyaan 2. Hotspot (Teks, Gambar, dan Video)
Scoring System	Belum tersedia	Belum tersedia	Ada
Integrasi dengan platform lain	Platform berbasis HTML5 (Moodle, drupal, dan wordpress)	Platform berbasis HTML5 (Moodle, drupal, dan wordpress)	Platform berbasis HTML5 (Moodle, drupal, dan wordpress)
Spesifikasi Perangkat	Standar	Standar	Spesifikasi Tinggi
Storage Data	Bergantung server yang digunakan untuk Moodle	Server Website H5P (Subscription)	Server Website 3D Vista (Subscription)

Fitur Umum H5P Virtual Tour 360º

General features:

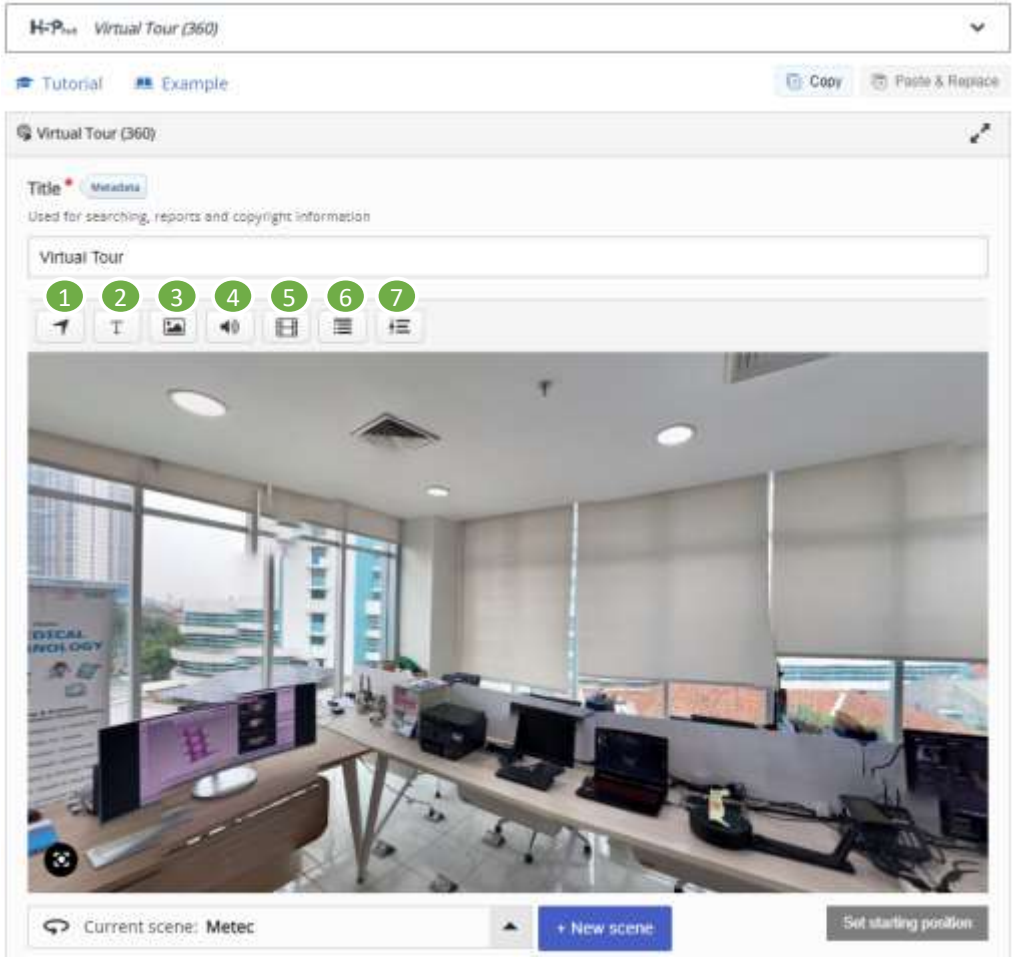
1. Virtual Tour (360) memungkinkan pengguna untuk menambahkan pertanyaan, teks, dan interaksi ke beberapa lingkungan 360 hanya dengan menggunakan browser.
2. Scoring belum dapat diimplementasikan di Virtual Tour (360).
3. Dapat diintegrasikan pada *publishing systems* seperti Canvas, Brightspace, Blackboard, Moodle and WordPress.

Jenis H5P yang dapat ditambahkan:

1. Teks
2. Gambar
3. Suara (untuk seluruh virtual tour, per scene, dan sebagai tombol scene.

1. Video
2. Single Choice Set
3. Interactive Summary

Fitur-fitur H5P Virtual Tour 360º



1	**Location** hotspots allow users to portal to other scenes within the workspace.
2	**Text** hotspots display important information and details as text strings.
3	**Image** hotspots display images from your local computer and can be useful for exposing key visual details.
4	**Sound** allows you to embed audio recordings.
5	**Video** hotspots enable video playback through either uploaded media files or external links.
6	**Summary questionnaires** assess user comprehension.
7	**Single-choice** questionnaires are a multiple-choice selection that responds to an overarching question.

Kebutuhan Perangkat

Hardware

- PC atau Laptop
- Kamera 360 atau Smartphone
- Tripod atau Gimbal Stabilizer

Insta360 ONE R Twin Edition

Samsung Gear 360

Gimbal Stabilizer

Software

- H5P (360 *Software Editor*)
- Photoshop (*Image Editor*)
- Google Street View (360 *Software Camera*)

Virtual Tour (360)

Google Street View

Contoh- contoh Virtual Tour 360

JOURNAL OF CHEMICAL EDUCATION

pubs.acs.org/jchemeduc Technology Report

360° Virtual Laboratory Tour with Embedded Skills Videos

Stephan M. Levonis,* Amanda L. Tauber, and Stephanie S. Schweiker

Cite This: J. Chem. Educ. 2021, 98, 651−654 Read Online

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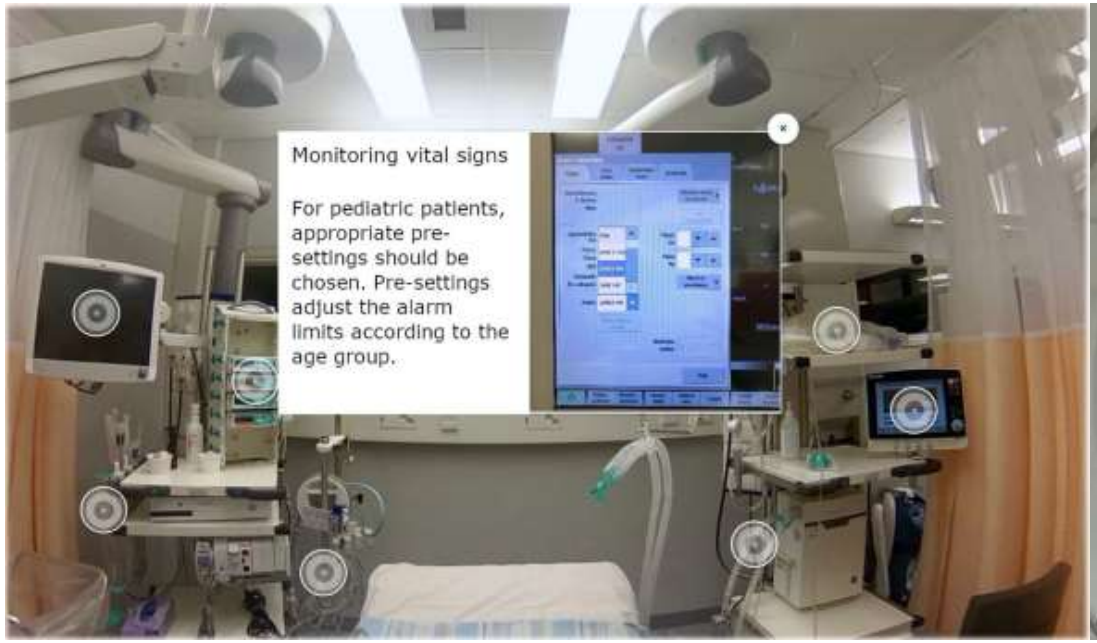
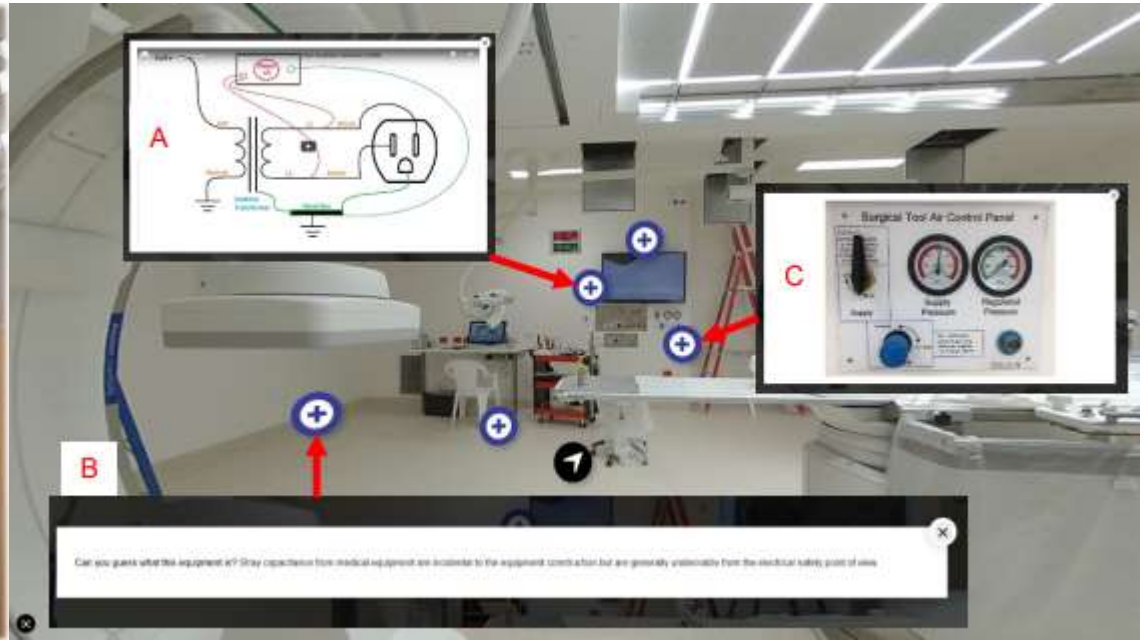
ABSTRACT: This paper describes the design and effectiveness of a 360° (identified as 360) virtual laboratory tour which was implemented in a second-year undergraduate chemistry subject to familiarize the students with the research laboratory environment, equipment, and skills needed to undertake the subject and first laboratory session. We include step by step guides on how to produce a virtual laboratory tour using freeware and on how to produce and incorporate interactive videos into the tour. The virtual laboratory tour that we developed was given to the students prior to their first laboratory class and was well-received by students with 100% of students surveyed reporting that it was an effective learning aid. Virtual laboratory tours offer a promising option for creating a personalized online laboratory experience.

KEYWORDS: *First-Year Undergraduate/General, Second-Year Undergraduate, Demonstrations, Laboratory Instruction, Safety/Hazards, Computer-Based Learning, Distance Learning/Self Instruction, Hands-On Learning/Manipulatives, Internet/Web-Based Learning, Multimedia-Based Learning*

Figure 1. (A) HPLC room. (B) Chemistry Laboratory, thin layer chromatography. (C) Chemistry Laboratory, column chromatography and rotary evaporator. (D) Cell culture room.

Contoh-contoh Virtual Tour 360





(Ravishankar, J., Tan, D., Armour, W., 2019)

Development of Virtual Simulation

- Pre-produksi
  - Purpose/Outcomes
  - Identify Requirements
  - Designing activities
  - Choose the activities that best fits the learning objectives
- Produksi
  - Proses Shooting
  - Upload Video to Youtube
  - Create simulation using H5P
- Pasca Produksi
  - Evaluation

Fitur-fitur yang diharapkan

- Participants suggested several features in virtual simulation including
  - Explanation,
  - Instruction,
  - User interface (animation and graphics),
  - Accessibility,
  - Feedback,
  - Interesting scenario, or storyline (based on the real situation, simulation, case-based),
  - User-friendly (navigation),
  - Gamification elements (checkpoint, goal, achievement, reward, leader board, hint, review, and evaluation),
  - Interactivity (forum discussion and direct message).

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Ada Pertanyaan?

Praktek #1 - Virtual Tour 360

- Install aplikasi Google Street View pada smartphone \gyro
- Ambil gambar menggunakan 360 Camera atau Smartphone
- Buat Virtual Tour 360 di Platform Moodle
- Upload 360 Images ke H5P Virtual Tour 360
- Tambahkan interaktivitas (Navigasi)
- Tambahkan hotspot (Text, Image, Video, atau Question)

Praktek #2 – Branching Scenario

- Pelajari skenario yang telah tersedia di Kelas OCI
- Buat Simulasi Virtual berdasarkan scenario tersebut
- Seluruh bahan yang dibutuhkan sudah tersedia di platform OCI