



Impact of New Technological & Scientific Discoveries

Working Group Report
2017 ADEE Annual Meeting
Vilnius, Lithuania

Meet our Team



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In partnership with



Special THANK YOU to all the participants!



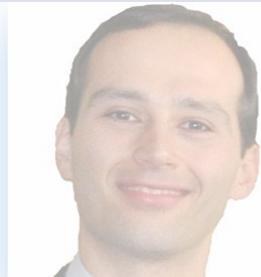
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OUTLINE

Literature Review

Current & Emerging Technologies

Best Science Practices

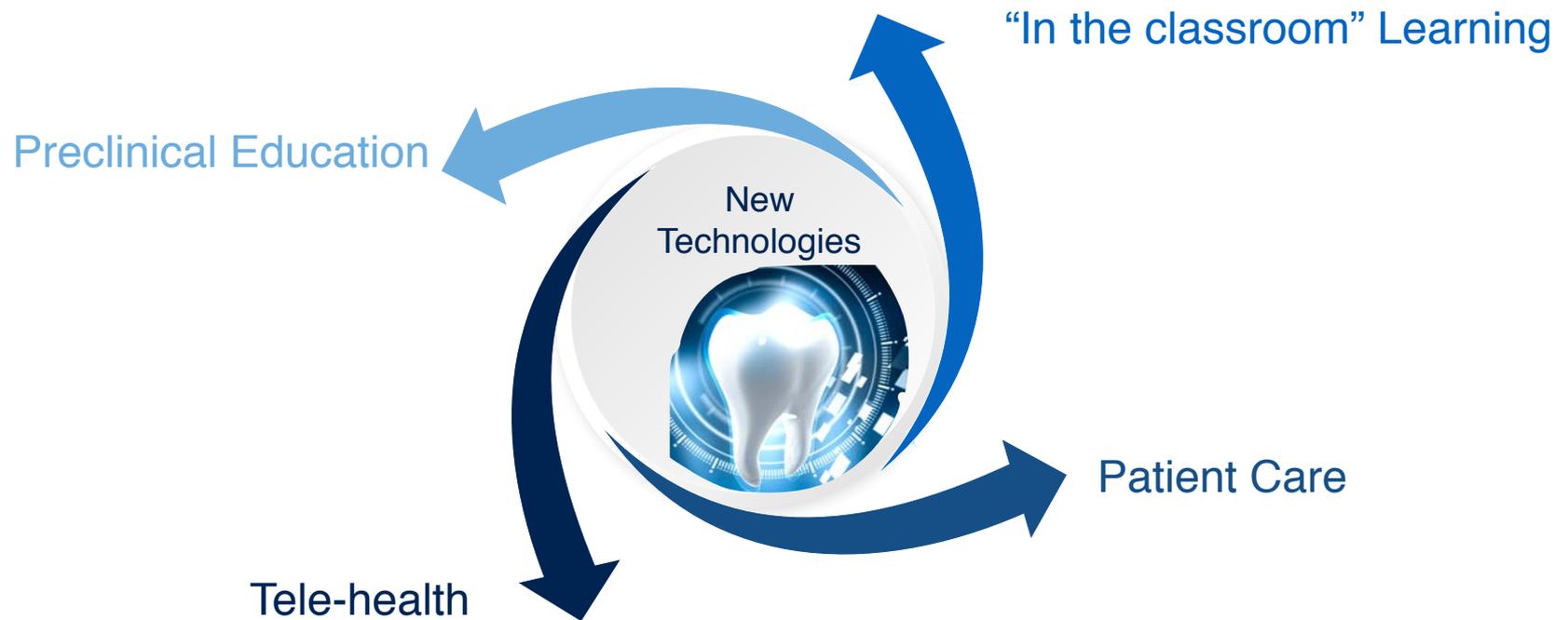
OUTLINE

Literature Review

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“Describe the most important technologies that are most likely going to be used in dental education and patient care in 2027.”



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Preclinical Education

- augmented reality;
- haptic technology;
- virtual reality;
- robot patient simulator;
- integrated TEL system;
- hyperlinked 2D/3D;
- 3D printing;
- faculty evaluation video and audio;
- e-portfolio;
- VR complements mannequins;
- 3D printing simulates tissues;
- collaborative learning technologies;
- video for teaching communications.

“Describe the most important technologies that are most likely going to be used in dental education and patient care in 2027.”



“In the classroom” Learning

- podcasts and webinars;
- software for curriculum management/mapping;
- assessment;
- delivery strategies;
- virtual reality;
- interactive e-Learning;
- case-based;
- social media as advising and motivation tool;
- gaming;
- cloud LMS;
- student evaluation of faculty teaching;
- cross country and institution teaching;
- flexibility in lecture;
- flipped classroom;
- daily quizzes;
- online learning with embedded quizzes.

“Describe the most important technologies that are most likely going to be used in dental education and patient care in 2027.”



Tele-health

- professional versus students;
- variety of techniques - most untested;
- behavioral approaches and skills;
- data used for decision support, access, cost, follow-up care;
- second opinion;
- speciality care;
- faculty evaluation of teaching;
- team teaching (horizontal & vertical);
- interdisciplinary experiences including geographical;
- cloud electron health records (EHR);
- smart watch for notifications;
- consultations, diagnosis, triage;
- combine with mobile clinics;
- cloud EHR and advanced data collection.

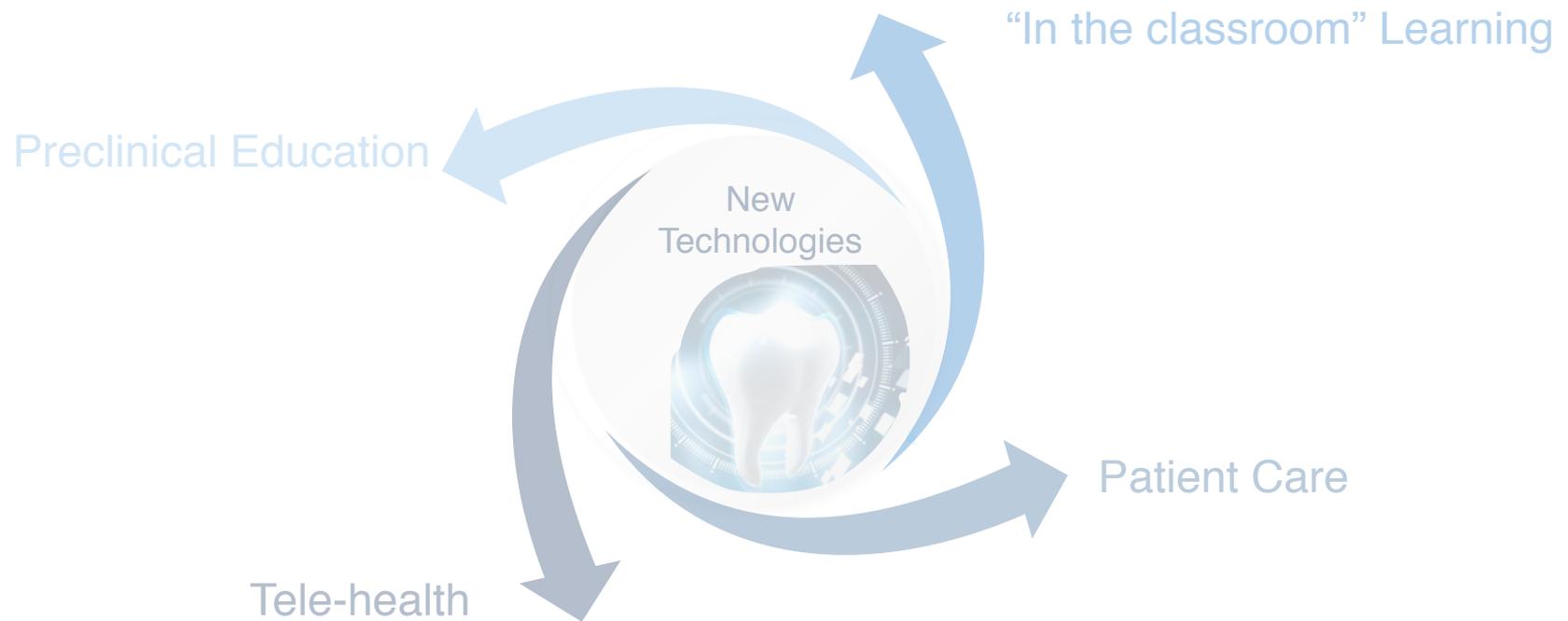
“Describe the most important technologies that are most likely going to be used in dental education and patient care in 2027.”



Patient Care

- videos of treatment and analysis (feedback to student);
- artificial intelligence that learns about student (analytics);
- complex scenarios;
- 3D printing;
- CBCT;
- genetic sequencing;
- personalized medicine;
- big data for decision support;
- imaging, scanning, e-assisted surgical tools;
- faculty evaluation;
- team (horizontal and vertical);
- patient perspective;
- e-portfolio;
- community-based education;
- voice operated/integrated EHRs;
- inter-professional collaborations.

*“Describe the most important technologies that are most likely going to be used
in **dental education and patient care** in 2027.”*



*How will educators adapt to these new technologies and
“**prepare students for a future we cannot predict**”?*

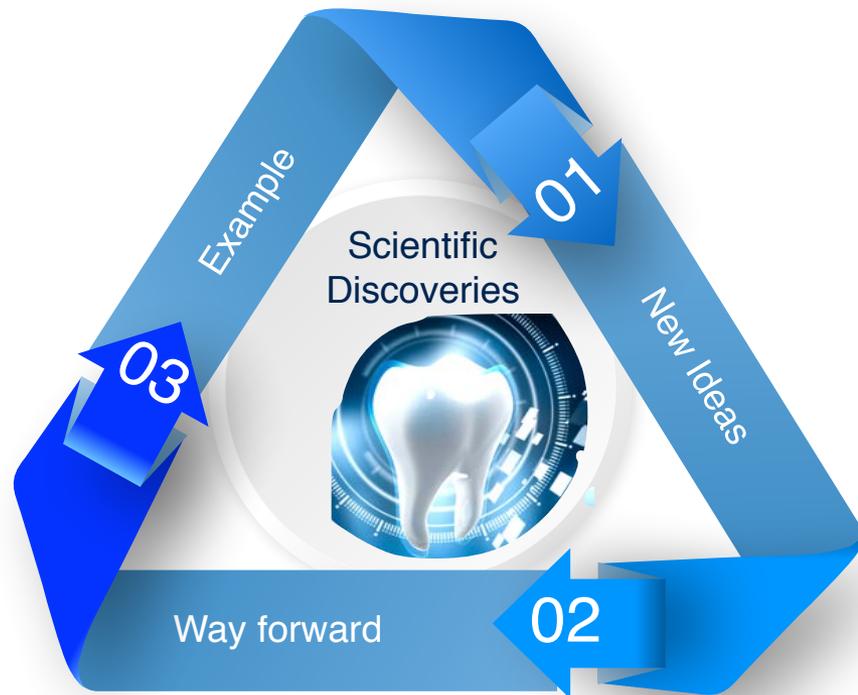
OUTLINE

Literature Review

Current & Emerging Technologies

Best Science Practices

*“Select the most important scientific discoveries that would be important for dentistry and discuss how such information could be introduced to students. In particular, the participants were asked to discuss how we can create **critical thinkers to be sophisticated consumers of research.**”*



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What are the most important areas of new scientific discoveries:

- early diagnosis and monitoring, nanomedicine, informatics, saliva as a diagnostic;
- ecology, microbiome and the biofilm: understanding interactions with our microbiome for early diagnosis;
- regenerative dentistry (soft & hard tissues);
- bioactive materials: enhancing the tooth's innate ability to repair.

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Scientific
Discoveries



Way forward

02

How do we introduce these new discoveries to our students and create critical thinkers:

- change assessment methods (embedding critical thinking in assessment);
- giving the students robust methodology for evaluation of evidence (prepare faculties – Socratic approach);
- clinical treatment planning & case discussion;
- inter year, inter- & intra- professional (peer to peer support & librarians);
- personalize (make your own soup) innovative creative methods (gamification, social media)

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Example

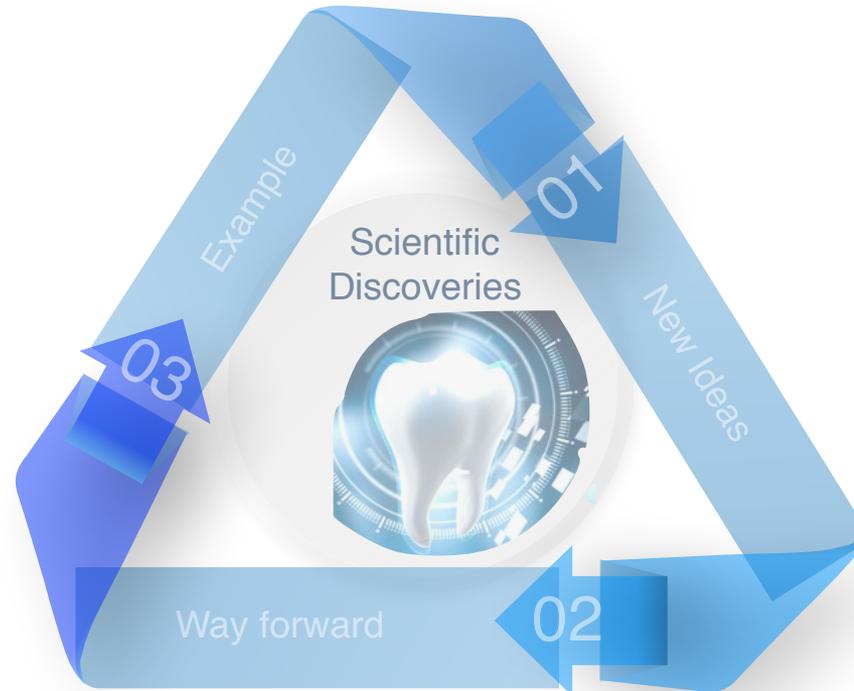
Scientific
Discoveries



Example of best practice from a group:

- getting students to carry out systematic reviews of the literature & learn how to critical assess what they read;
- importance of learning how to analyze bias;
- importance of being exposed to both good and bad systematic reviews;
- pros and cons of meta-analysis.

*“Select the most important scientific discoveries that would be important for dentistry and discuss how such information could be introduced to students. In particular, the participants were asked to discuss how we can create **critical thinkers to be sophisticated consumers of research.**”*



*Evidence based dentistry needs to be **clinically contextualized**;
research and research methodology should be integrated into the curriculum
and wider into the community.*

THANK YOU!



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