PART II

Qualitative research on analysis of students' learning motivation

Semi-structured Interviews

In the pre-interview survey, the majority of respondents expressed the belief that students are actively engaged in class. However, during the interviews, concerns were raised about a lack of student participation, particularly in responding to questions and class discussions. Similarly, when asked about the use of active learning techniques in class, one participant rated it a perfect 10. Nevertheless, the interviews revealed an overwhelming expression of dissatisfaction with the teaching methods, indicating a lack of engagement.

Furthermore, while most participants indicated that applying active learning to classes is not overly challenging, the reality is that these methods are rarely put into practice. There is uncertainty regarding the participants' comprehension of active learning methods. While most acknowledged being raised in a diverse and expansive learning environment, the interviews revealed a prevalent sentiment of being brought up with spoon-feeding methods. Encouragingly, all participants unanimously agreed that interventions can be made when students lack motivation, demonstrating a collective willingness to change the current status quo. While most participants believe that teachers innovate their teaching methods annually, there is a divergence of opinions regarding the effectiveness of the current teaching approaches, with over half advocating for necessary changes.

All respondents acknowledged that the design of learning spaces is crucial for high-quality education. However, this aspect was scarcely touched upon during the interviews.

The majority of participants had not previously encountered metaverse, yet almost all expressed a readiness to incorporate them into their teaching or learning practices. Furthermore, most participants perceive the impact of the metaverse on the quality of education as positive. However, they unanimously agree that implementing the metaverse in educational institutions poses significant challenges. In the survey, most participants recognized the potential utility of the metaverse in courses such as anatomy, for visualizing human functions and structures. Additionally, some believed that the metaverse could be beneficial for soft skills-oriented courses, such as social outreach, general education, and poster presentations.
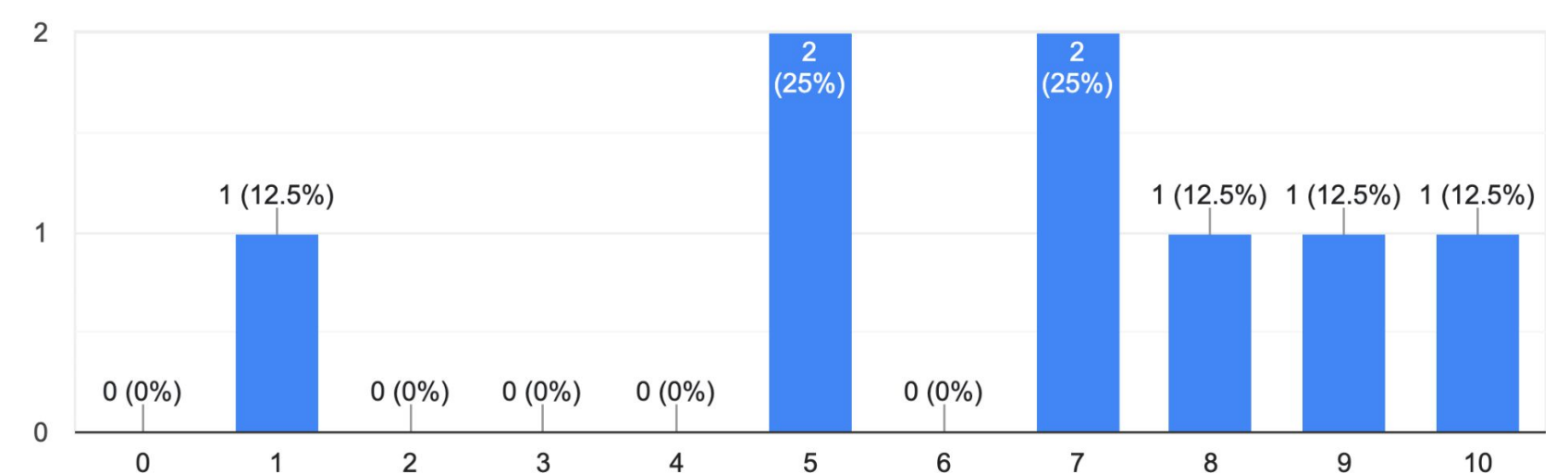
I have used or experienced a metaverse before (e.g. virtual reality, video gaming).
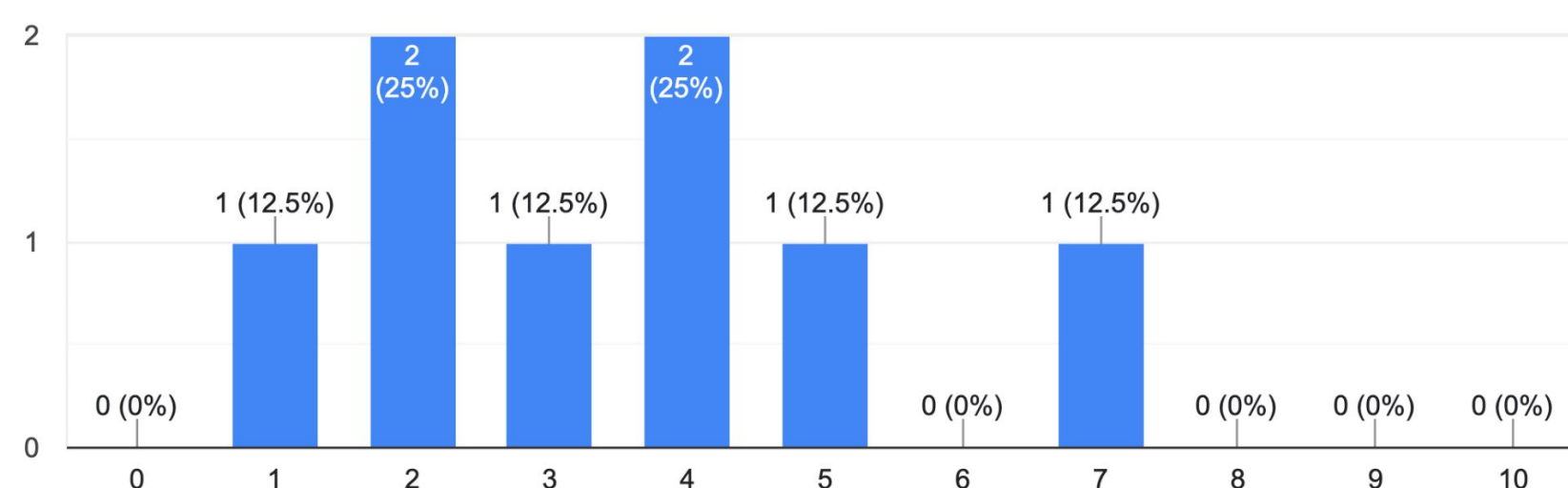8 responses
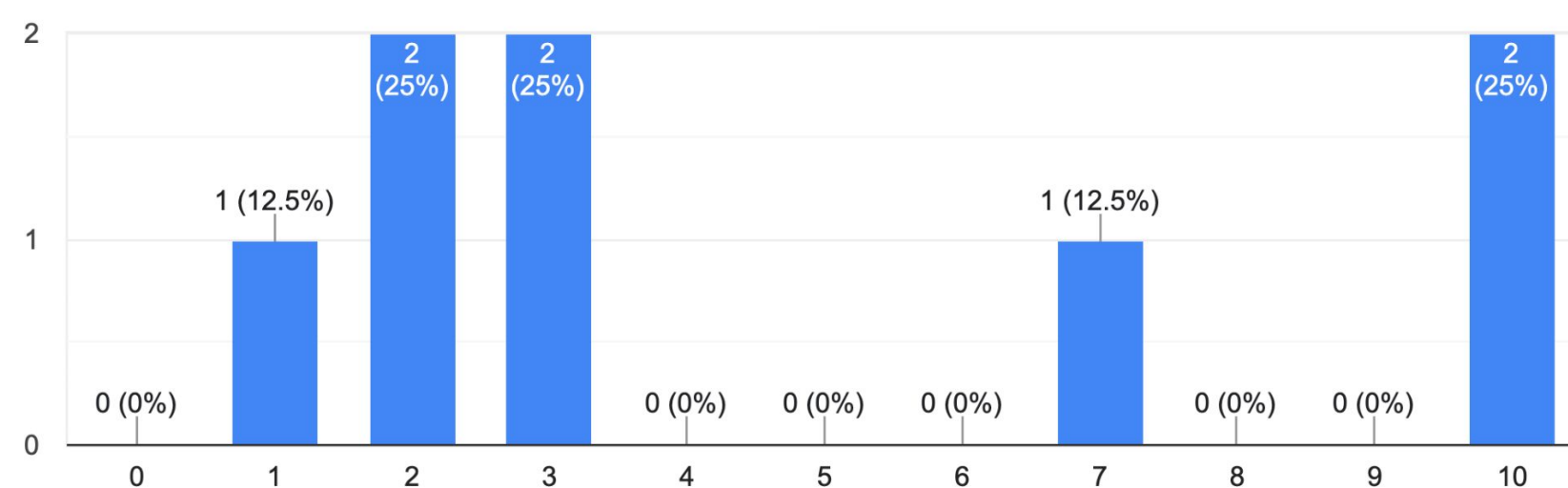
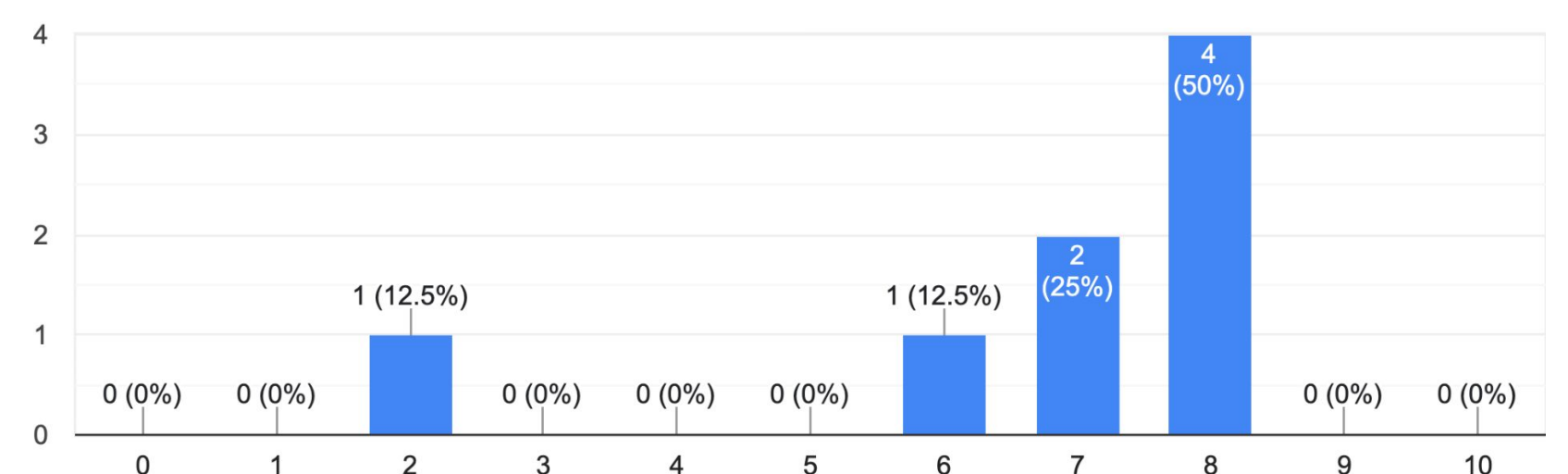I perceive the impact of metaverse on the quality of education as positive.
8 responses

I think implementing metaverse in educational institutions is not challenging.
8 responses

I am willing to adopt a metaverse in my teaching / learning.
8 responses

Students Perspectives

Insights from a 1st Year Biomedical Engineering Student at CUHK with Special Education Needs (SEN)

Motivation and Engagement

- **Incentives**: question games with incentives, for instance, a reward system with units of free time or snacks for completing tasks.
- **Humour and Relatability:** Using jokes and relatable content, like memes, can make learning more enjoyable.
- **Self-motivated learning:** within the realm of biomedical engineering, delving into subjects that captivate students, such as **cyberpunk or sci-fi**, and exploring their potential practical applications, could pave the way for innovative medical engineering products like advanced prosthetics and insulin pumps, which is undeniably fascinating.

Holistic Education and Practical Learning

- 🎨 **Well-rounded education**: with physical activities, the cultivation of artistic values, mental and spiritual dimensions. It is uncommon for professionals in this field to pursue all-roundedness, given the substantial workload, but the student believe it is paramount.
- **Personal Growth:** acquire knowledge on an intellectual level, but also develop an understanding of ethical considerations and the potential long-term repercussions of certain actions. Together with empathy and understanding of a patient's' journey, suggestions include metaverse communication platforms and social outreach programs.
- **Life Guidance:** accessible counselling and guidance services.
- **Practical Experiences:** project- / research- / inquiry- based learning with real world case studies and hands-on experiences can benefit all students, not just those top of the class.

Technology-enabled Learning

- 🌐 **Information technology:** plays a pivotal role in making knowledge accessible. The student has been engrossed in online videos on prosthetics and noticed many individuals with disability lamenting the exorbitant costs of healthcare. This drives the student's aspiration to lower product cost through better design, and in continuous learning to better serve society, overcoming attention deficit in learning.

Challenges and Support Needs

- **Student-Teacher Relationship:** A friendly, but professional relationship, promoting mutual understanding of learning and teaching difficulties.
- 🎓 **Tailored support:** The student discussed attention span difficulties. Peer schemes or note-taking tools can support students who may zone out. Extra time and consideration for exams can be helpful for those with special needs.
- **Personalised Learning:** Encouraging and tailoring to different learning styles. Good education should cater to diverse learning needs, providing support for different levels of students.
- **Differentiated Programming:** Students have varying levels of talent, different remedial programs can help them consolidate knowledge.

Career Aspirations and Educational Experience

- **Aspirations:** to make biomedical technology accessible to financially challenged individuals. The student's pursuit of knowledge is driven by a desire to help others, compelling them to continually self-improve.
- **Design thinking:** user-friendly designs are crucial skills in biomedical engineering; current curriculum may not adequately address these.
- 🤝 **Professional collaboration**: effective communication skills to prepare students for professional workplaces. The informant stresses the need for a sense of belonging in the educational environment.
- **Group presentations and tasks:** collaboration is essential to achieve diverse objectives, such as conceptualising impressive designs, constructing tangible products, or reaching conclusive decisions. However, fixation on minor details and group dynamics can needlessly complicate matters, leading to failure in meeting deadlines.
- **Professional Sustainability**: ethical conduct is indispensable for success and sustainability. Precision design is equally crucial, given the profound impact of our products on people's lives - to consider wide-ranging perspectives and feedback.
- **Social outreach:** Understanding the needs of local communities is pivotal for developing solutions that truly address their requirements. Employing sociological tools like questionnaires and interviews to gather insights can be instrumental in learning endeavours.

Video Conferencing Challenges & Metaverse Opportunities

- 🎥 **Challenges of Zoom:** Students may feel uncomfortable, embarrassed, or intruded upon during online video calls, impacting their engagement and participation.
- **Back Row-ers:** Participating in a Zoom session while keeping the camera turned off is akin to sitting at the back of a lecture hall, passively absorbing information or engaging in unrelated activities. One might be digitally present, but they are essentially disengaged, perhaps occupied with household chores or playing games.
- **Active learning… again:** The passive nature of certain classes may lead students to refrain from activating their cameras and participating actively. While teachers may insist on camera usage, students may feel it encroaches upon their privacy. At times, individuals may cite technical issues as a reason for not using it.
- **Confidence and self-esteem:** Some individuals may feel uneasy during online video calls, possibly due to subconscious concerns about their appearance or voice being reflected back at them. This discomfort may stem from inconfidence in their physical attributes. Even with the option of virtual backgrounds, individuals may feel self-conscious about their real-life surroundings, such as family members entering the frame. This may hinder their confidence in appearing on camera.
- 🕹️ **Virtual customization:** VR chat may enhance engagement and comfort in online calls, where users have the option to customise their appearance and virtual environments to mitigate privacy concerns.
- **Virtual Interaction:** individuals can interact within virtual spaces and engage others, presenting a more captivating alternative to traditional classroom settings, where lectures dominate the learning experience.
- **Preconceptions:** If users find these features appealing, they are more likely to embrace it; otherwise, they may be disinclined to do so.

In what ways can active learning methods be integrated into classes to enhance student engagement and improve the learning experience?

1) Incorporating interactive activities, such as group discussions, problem-solving exercises, and hands-on projects.
2) Utilising technology-based tools, such as educational apps, virtual simulations, and online quizzes, allowing students to interact with the content in a more personalised and immersive manner.
3) Promoting collaboration, where students work together on projects, presentations, and case studies, can foster a sense of community and cultivate communication skills.
4) Student-led discussions and providing real-world examples can stimulate critical thinking and promote active engagement.

How to engage students in class and motivate them to participate?

By asking questions and offering incentives, such as leaderboards, real-time rankings, and gamification. Students can be involved in activities rather than just listening, tailoring teaching methods to different learning styles. Also, providing a well-rounded education that encompasses physical, intellectual, artistic, and ethical aspects can help teachers effectively engage and motivate students in class.

What are the challenges faced by students in the learning process and how can these be addressed?

Common issues include difficulties with concentration, motivation, and special education needs. Students may struggle with attention span, finding it challenging to remain focused for long periods of time, particularly when facing complex or less engaging subject matter.

- Providing tailored support, such as note-taking assistance and additional time during exams.
- Fostering a supportive and communicative relationship between students and teachers can create a conducive learning environment, for students to feel understood and supported in their journey.
- Promoting self-motivated learning can help students develop a holistic approach to their studies.

How can the learning environment be improved to foster a sense of belonging and social interaction among students?

Incorporating social outreach elements into the curriculum, such as community service projects or interactions with local communities outside the classroom can promote empathy, social responsibility, and a sense of belonging within the broader community. Establishing strong student-teacher relationships and encouraging open communication can contribute to a supportive and inclusive learning environment.

Insights from 1st year biomedical engineering student from mainland China studying at CUHK

Self-learning vs traditional lectures

self-learning is more efficient, particularly for subjects where they perceive limited engagement and participation from the teacher.

- Large Class Sizes: The interviewee mentioned classes with up to 300 students, where the teacher's continuous monologue leads to disengagement and limited interest in the subject matter.
- Lack of Engagement: in lectures, teachers can sometimes overemphasis on historical or non-medical topics, which they find uninteresting and irrelevant to their field of study.
- Attendance and Participation: many students struggle to attend early morning classes, while others feel they already understand the material, leading to low attention and attendance.
- Boredom and Ineffective Teaching: The interviewee described classes as boring, with teachers not providing interactive learning experiences.
- Impact on Learning Outcomes: the examination-oriented education system, combined with unengaging teaching methods, may lead to a lack of motivation for learning.

Competitive, exam-oriented systems

- Importance of grades in the education system causes imbalance in learning motives due to the emphasis on academic achievement over holistic skill development.
- Pressure causes students to prioritise memorization and exam preparation over practical application and critical thinking, leading to shallow engagement with the subject matter, understanding and applying knowledge.
- the impact on teaching methods, where teachers may focus on exam-related content to ensure student attendance, leading to a negative cycle where students are perceived as uninterested in learning beyond exam requirements.

Student's Learning Preferences

- Enjoys practical and lab courses due to hands-on experiences to explore concepts directly, which aligns with their interest in subjects related to medicine and biology.
- Abstract subjects like maths and physics, which are typically taught in a traditional lecture format, can be difficult to relate to and engage with.

Innovative Learning Approaches

- Discussions: allow students to express their ideas, share perspectives, and critically analyse concepts to promote a dynamic exchange of thoughts and articulate their understanding of the subject matter. In debate, students can challenge each other's viewpoints, leading to deeper exploration of topics.
- Interactive Activities: group problem-solving tasks, case studies, and role-playing scenarios can provide hands-on learning experiences that apply theoretical knowledge to practical situations and promote cooperative learning.
- Competition Games: challenge students to think critically in an interactive way can enhance motivation and engagement. These games can be designed to simulate real-world challenges, requiring students to work together to solve problems and achieve common objectives. By creating a competitive yet collaborative atmosphere, students can apply their knowledge in a dynamic setting.

Cultural and Educational Insights

- The cultural differences in education between mainland China and Hong Kong are highlighted in the interview.
- The competitive nature of the education system, particularly in mainland China, creates a strong focus on achieving high grades to secure future job opportunities and further studies, such as pursuing a Ph.D. This emphasis on grades can lead to a narrow focus on exam performance rather than fostering a genuine interest in learning and personal growth.
- Also, mainland students tend to be more focused on immediate feedback and are driven by the need to know if their answers are correct post-exam, while their local friends from Hong Kong are more relaxed after tests and focus on daily activities.

How can Metaverse be implemented effectively in education, considering the challenges faced by students?

For biomedical engineering students, the implementation of Metaverse can consider the need for hands-on learning experiences, such as virtual simulations of lab experiments, interaction with medical devices and imaging technologies, allowing them to gain practical skills and knowledge. Furthermore, taking into account the need for direct interaction with professors, particularly for more abstract subjects like math, physics, and programming. This could involve incorporating virtual office hours and interactive sessions where students can ask questions and receive real-time guidance from their instructors. Additionally, the implementation should address the cultural and educational differences between local and foreign students, ensuring inclusivity and support for diverse learning styles.

The potential for innovative approaches, increased efficiency, and flexibility in learning to address challenges in traditional classroom settings is evident. However, there are concerns about self-discipline, focus, and practical limitations in virtual spaces.

What methods can be used to make large lecture classes more engaging and interactive for students?

1. Incorporating interactive elements such as quizzes, polls, competition, discussion or other group activities that encourage participation and collaboration among students.
2. Integrating practical demonstrations, experiments, real-world projects and applications can help students see the practical relevance of the material being taught. By applying theoretical knowledge to real-life scenarios, it makes the content more relatable, interesting and memorable.
3. Leveraging multimedia resources, such as videos, simulations, and visual aids, can enhance the delivery of complex concepts and cater to different learning styles, making the content more accessible.
4. Being bilateral … from the beginning: to help students feel comfortable expressing their ideas and engage in discussions, do not leave them sitting for too long. Working them into a participative mode at first instances by encouraging open interactions (discussions, games, etc.) early-on in class. This approach sets the stage with a captivating tone and mood, and their attention is all yours for the remaining time.

What impact does the incorporation of games have on building a sense of belonging in the learning environment?

The interviewee mentioned that when playing a game, individuals are more inclined to answer questions, as the game environment is perceived as less serious, and students are less concerned about being correct. Fear of judgement is one of the main obstacles for in-class participation. The interviewee provided an example, mentioning the use of competitions within groups to solve the teacher's questions, while integrating textbook knowledge and engage with learning materials. Additionally, the interviewee suggested that rewards, such as small candies or similar incentives from the teacher for winning the game, can further motivate students to participate actively. Gaming can help to enhance long-term memory, as the interviewee could still remember answers to the game she played in class.

Furthermore, the use of games increases interaction between students, creating a sense of familiarity, which can promote confidence and comfortableness to participate and engage. When students perceive the learning environment as fun and interactive, it helps motivate friendly competition and teamwork, and develop a sense of connection and belonging.

What are the potential learning enhancement strategies?

1. Encouraging Critical Thinking: Shifting from rote memorization to problem-solving skills, achieved through active and qualitative learning methods, and open-ended assignments, encouraging students to analyse and evaluate information.
2. Promoting a Holistic Approach: education that values creativity, innovation, and personal development alongside academic achievement can help students see the broader purpose of learning beyond grades.
3. Redefining Assessment Methods: alternative methods such as project-based assessments, portfolios, and presentations can provide a more comprehensive evaluation of students' skills and knowledge, moving away from a sole reliance on traditional exams.
4. Reverse Mentorship: creating supportive, stimulating and inclusive learning environments by allowing students to ask questions anytime and providing opportunities for student-led processes and flip classrooms helps to build responsibility and a participatory culture.

Insights from a 2nd Year Biomedical Science Student at CUHK

Educational Quality and Challenges

- Importance of being challenged to think, citing an example where a professor engaged the class in a thought-provoking exercise related to plasmids, which enhanced their understanding of complex concepts.
- Access to resources plays a crucial role in learning progression, such as VR technology for studying anatomy
- The effectiveness of clear and concise teaching and the impact of the learning environment on motivation, creating a pleasant and welcoming atmosphere is important, and the role of classmates in creating a conducive learning environment.

Student Perspectives on Motivated Learning

- The challenges of asking questions in a university setting, noting that many students are reluctant to ask questions due to feeling that their questions are invalid.
- The student aspires to create a more open and inclusive learning environment, where students feel comfortable asking questions and creating open dialogues without fear of judgement.
- Also, proposes the implementation of anonymous question platforms to encourage a more open and welcoming atmosphere for inquiries.

Enhancing Engagement with Technology

- 3D learning environments can enhance interaction and engagement.
- User-friendly interfaces is crucial for adoption of new technologies.
- online platforms should adapt to evolving educational needs, fostering lifelong learning and skill building.
- Video conferencing presents engagement challenges, concerns include camera usage, feelings of isolation, and distractions.

Group Work and Social Dynamics

- Challenges in group projects include group dynamics and free-riding.
- The impact of social relations, class participation, and a sense of belonging on the learning process is emphasised.
- highlighting the differences in goals and motivations among students, when everyone has the same goal, it is easier to collaborate and learn, but when goals are diverse, it becomes more difficult.

A Student's Journey: the evolution of learning experiences from high school to university

- In high school, there is a common goal of pursuing higher education, creating a more unified environment where students are more likely to work together and learn collaboratively.
- In university, the interviewee notes that students' goals become more diversified, with many pursuing degrees for reasons other than pure interest in the subject. This diversification of goals can make it challenging for students to work together and learn effectively, as individual motivations vary widely.

Digital Learning Environments: Examples and Benefits

🎮 Video games designed for educational purposes, such as teaching complex biological processes like glycolysis, require players to make decisions collaboratively and strategically.

🛠️ Creative Projects that involve hands-on activities, such as constructing a human figure from cardboard, necessitate effective teamwork and communication among students.

👀 Digital platforms like Virtual Reality (VR) and online games has introduced a more immersive learning experience, which can be instrumental in fostering a sense of community and students interaction.
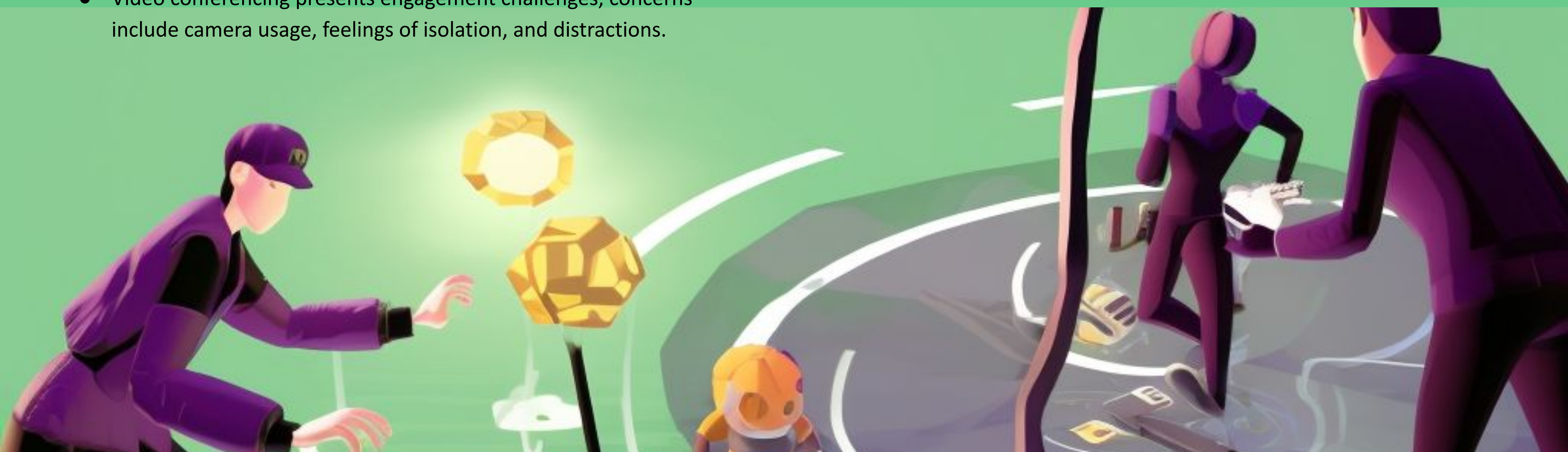
Benefits of Digital Learning Spaces:

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What are the challenges and benefits of group projects in the context of university education, and how do they influence students' learning experiences and outcomes?

Group projects help develop soft skills and are essential for their future careers. Additionally, the integration of interactive, hands-on learning experiences and project-based learning can enhance understanding, contributing to long-term retention of knowledge.

Working in a group setting gain diverse perspectives and to apply their knowledge in real-world scenarios, fostering practical learning experiences. However, the effectiveness of group projects largely depends on the composition of the group and the level of engagement and commitment from all members.

One of the challenges is the issue of free-riding, where some group members may not contribute equally, leading to an unfair distribution of workload and potential negative impact on individual grades. Additionally, differing expectations among group members can create disparities in effort and outcomes. The interviewee also expressed concerns about the potential imbalance in group dynamics when students self-select their group mates, leading to inter-group disparities in motivation and work ethic.

What factors contribute to fostering a sense of belonging in educational settings?

When students feel connected to their classmates and the academic community, they are more likely to be confident, motivated to participate in class and ask questions engage in their academic pursuits and collaborate effectively. Several factors can contribute. Firstly, strong relationships with classmates and seniors create a supportive network, promoting a feeling of unity and shared purpose. Furthermore, the absence of excessive competition and a focus on collaborative learning rather than relative grading can contribute to a more inclusive and supportive environment, where students feel accepted and valued. Finally, the physical environment, such as aesthetically pleasing study spaces, can also impact students' sense of belonging and motivation.

Insights from a 3rd Year Medical Student at CUHK

Academic Schedule and Learning Methods
- Lectures and practical lessons are described as unidirectional, with a call for more interactive teaching modes.
- Importance of clinical knowledge expansion through attachments and research programs.
- Need for comprehensive teaching materials and bidirectional learning environments.
- A lack of discussion in most of the practicals and some of the tutorials can be uninspiring if the teacher does not show passion.
- Subjects are being taught in silo, with little opportunity for knowledge integration, a disconnection with the practise of medicine.
- Requires more opportunities to review, reflect and present what has been learnt in a systematic way, for instance, at the end of every chapter to have a group presentation, which can also provide teachers with insights over how much has been learnt.

Passion for Medicine and Practical Application
- A keen interest in medicine due to its holistic nature and focus on human communication, emphasising the need for soft skills in patient care; however, these elements were not often incorporated in teaching and learning.
- Significance of practical application for future clinical challenges.

Virtual Learning and Social Relations
- The culture of video conferencing, where only the presenter or those of higher rank speak, which can lead to feelings of nervousness or embarrassment to participate in interaction
- Benefits of study groups and collaborative learning, which has led to close friendships among study partners, becoming a significant part of their social life.

Community Engagement and Professional Aspirations
- The student was part of a uniform team, built passion in community engagement and diverse social communication. Thus, started an initiative with his fellow classmates to provide voluntary healthcare services to the homeless.
- The cross-disciplinary integration of interests in surgery, research, and community service.
- Importance to nurture hands-on experience and leadership skills early on in healthcare education.

Technology in Healthcare
- An over reliance on lecture powerpoint, but to practise medicine required more interpersonal and intersubject interaction.
- Virtual simulations for training and planning, for instance, setting up a clinical situation for revision and synthesis of class content.
- AI for data processing, administrative tasks, and Q&A games to prepare for exams.
- Proposing a database consortium from cooperating hospitals to provide clinical data for students to conduct case study, so as to better prepare for real world challenges and knowledge integration.

Support and Recognition
- Support from consulting tutors at CUHK, including funding and pursuit of NGO status.
- Pursuing recognition by the government to raise money with an accredited licence.
- Positive response to student recruitment for community service initiative, showcasing proactive engagement in community healthcare initiatives

What motivates the interviewee to participate in class and how does it relate to their interest in medicine?

The interviewee is motivated to participate in class due to their strong interest in medicine. They find medicine fascinating not only for the scientific knowledge it provides about the human body but also for its emphasis on communication with others, including future colleagues and patients. They believe that effective communication is a crucial aspect of healthcare and that it requires practice and face-to-face learning. Their interest in medicine is driven by the holistic nature of the field, which encompasses biology, chemistry, and pharmacology, as well as the need for effective communication skills in diagnosing and treating patients. Their motivation to participate in class is directly related to their passion for medicine and their understanding of the importance of communication in the healthcare profession.

What are the interviewee's perceptions of using Zoom or Microsoft Teams for learning, and what can be done to improve participation in these platforms?

The interviewee expressed that many students feel embarrassed, distracted, or lonely when using Zoom or Microsoft Teams for learning. They attributed this to the virtual environment created by these platforms, which can make communication feel fake and unreal due to the lack of face-to-face interaction. Additionally, they mentioned that the culture of these platforms, where only the presenter or those of higher rank speak, can lead to feelings of nervousness or embarrassment when speaking in a large group. The interviewee suggested that to improve participation, the lecturer could provide more interesting and beneficial content for discussions.

What challenges does the interviewee foresee in implementing Metaverse in education, and how does the interviewee propose to address these challenges?

They mention that the newness of Metaverse presents a challenge, as it may be repetitive in certain tutorial classes, making it no different from being in a real classroom. Additionally, the interviewee highlights the technical challenges, such as setting up a 3D scanner to scan specimen details and ensuring the program runs smoothly without errors. They also note the difficulty in transitioning medical students from a unidirectional learning mode to a more interactive world within the Metaverse.

To address these challenges, the interviewee proposes making students understand the benefits of the system for their learning and establishing a system that helps students solve real-world problems encountered in their learning. They also suggest creating a virtual dissection lab inside the Metaverse, allowing students to freely scan specimens and visit the lab at any time. Additionally, the interviewee emphasizes the need for a comprehensive database based on the syllabus and the integration of different copyright materials and technology to support the initiative. They also mention the potential use of AI for data processing and administrative tasks, as well as the need for effective leadership and organizational skills in the healthcare profession.

How does the interviewee perceive the role of social relations in the learning process, and what initiatives have they taken to promote social engagement in the medical student community?

The interviewee perceives social relations as a significant aspect of the learning process, stating that studying comprises 75% of their daily schedule, leading to close friendships within study groups. They emphasize the importance of study groups for effective learning, as it allows for questioning and checking each other's understanding of concepts. The interviewee also highlights the informal nature of study groups, which promotes a less formal and more interactive learning environment.

In terms of promoting social engagement in the medical student community, the interviewee has taken the initiative to provide healthcare services to the homeless population. They express the importance of community engagement and the need for healthcare providers to communicate with diverse social groups. They have organized activities such as health checks for homeless individuals and plan to conduct home visits to the elderly during the New Year holiday. Additionally, the interviewee has established a student body for healthcare activities and services, collaborating with other NGOs to further their community engagement initiatives.

Insights from a 3rd Year Medical Student at CUHK

Keywords: `Medical Education` `Active Participation` `Learning Experience` `Teaching Quality` `Collaborative Learning` `E-learning`

Aspects to Keep:
- Interaction between teachers and students remains crucial for effective learning and knowledge consolidation.
- The quality of education, particularly comprehensive resources, is valuable for studying and preparing for exams.
- The student finds endocrine lectures well-organized and enjoyable, indicating the importance of effective teaching methods.

Aspects to Change:
- Lengthy lectures can be challenging for students, leading to exhaustion and difficulty in retaining information.
- The teaching style and lecture content can be difficult to follow and may require improvements for better understanding.

Enriching the Learning Experience
- The student emphasises the role of passionate teachers in enhancing education quality. 🍎
- Interaction in learning is deemed essential, with a focus on engaging discussions and active participation. 💬
- Access to resources is critical, especially for complex subjects like anatomy. 📚 diagram sample exam paper different, no mark up
- The importance of ongoing communication between teachers and students is highlighted to extend learning beyond class. 🗣️

Adapting to Modern Education Needs
- The student suggests that lengthy lectures could be moved to an e-learning platform to allow for more flexible learning. 💻
- The proposal for more tutorial sections to improve interaction and understanding. 🏫
- The student acknowledges the importance of foundational knowledge in biomedical science and the need for integration with clinical practice. 🔬
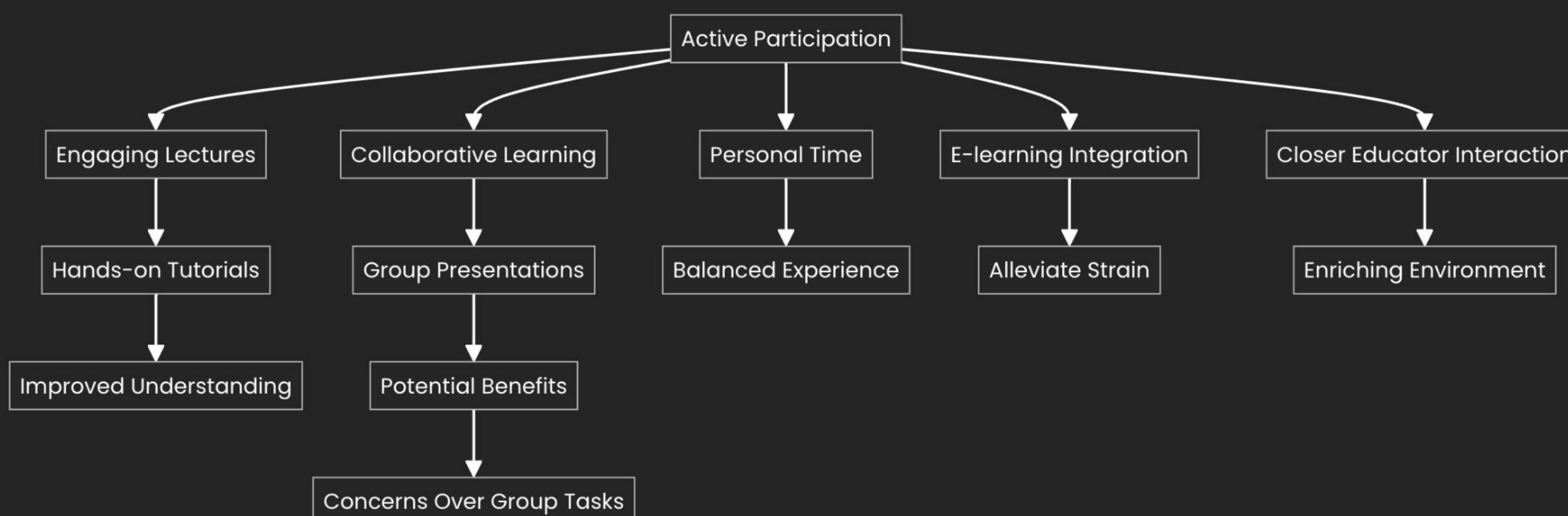
Addressing Academic Challenges
- They express concerns about the difficulty of lectures, particularly in anatomy, due to time constraints and complex diagrams. ⏳
- Positive feedback on well-organised lectures, showing the impact of effective teaching methods. 👍
- The challenge of balancing personal time with the academic workload and the need for a supportive community. ⚖️

Rethinking Assessment and Engagement
- The student discusses the challenges of group presentations and reflective sharing topics, expressing concerns about the burden and lack of meaningful engagement. 💬
- Advocacy for more interactive and manageable lecture formats, and better use of e-learning platforms. 🖥️
- Scepticism about the value of graded reflective sharing topics and lengthy presentations on personal experiences. 🤔

Educational Elements and Proposals:

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                          Active Participation
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 Engaging Lectures  Collaborative  Personal Time  E-learning   Closer Educator
                    Learning                      Integration   Interaction
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 Hands-on Tutorials  Group       Balanced     Alleviate      Enriching
                     Presentations Experience   Strain         Environment
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 Improved            Potential
 Understanding       Benefits
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                  Concerns Over Group Tasks
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What are the qualities of a good education and can these qualities be implemented in the learning environment?

Passionate teachers, interactive learning, access to resources, and ongoing support for student progress. These qualities can be implemented in the learning environment by ensuring that teachers are passionate and engaged in their teaching, promoting interactive discussions and engagement in class, providing ample resources for learning, and maintaining open communication between teachers and students for ongoing support and guidance.

How does the student feel about lectures and what suggestions does the student have for improving the format?

The student expresses concerns about the length and quality of lectures, particularly noting that some anatomy lectures are difficult to follow due to time constraints and a lack of clarity in the presentation of complex diagrams. They also mention that endocrine lectures, while well-organized, can be excessively long, making it challenging to stay engaged throughout the entire duration.

The student suggests that lectures could be made more interactive and shorter, with essential main points covered in class and additional material studied at home. They also propose the use of e-learning platforms to provide pre-recorded lectures, allowing students to view the material at their own pace. Additionally, they advocate for more tutorial sections to allow for increased interaction with teachers and a better understanding of the lecture content. Overall, the student emphasizes the need for more engaging and manageable lecture formats to enhance the learning experience.

What is the student's opinion on group presentations and reflective sharing topics? How do these activities impact the learning experience?

The student expresses mixed opinions on group presentations and reflective sharing topics. They acknowledge that group presentations can be beneficial for learning, particularly when the task is manageable and directly related to clinical practice. However, they also highlight the potential burden, especially when there is a high emphasis on exam grades. The student also expresses scepticism about the value of reflective sharing topics, particularly when they are graded and involve lengthy presentations about personal experiences. They question the necessity of such activities and suggest that there should be better, more meaningful ways to engage in reflective learning.

Overall, the student believes that these activities can impact the learning experience positively when they are relevant, manageable, and directly related to clinical practice.

How does the student perceive learn-life balance and how does social relationships influence the learning process?

The student perceives the balance between personal time and academic workload as currently manageable due to the flexibility in medical school's teaching schedule. They mention that the attendance requirement for lectures is only 50%, allowing them to skip some lectures and view the videos at their convenience. This flexibility enables them to have personal time for gatherings and other activities. The student believes that maintaining a flexible timetable is crucial for balancing well-being and academic commitments.

They emphasize the value of building a social network through various activities and events, which allows students to access resources and advice from seniors while providing guidance to juniors. The student highlights the significance of intimate relationships with peers for support during study groups, exam preparation, and facing academic challenges. They also stress the importance of having an enjoyable life outside of academics, indicating that social relationships contribute to a well-rounded learning experience.

Teachers Perspectives

Insights from an Assistant Lecturer of Physiology and Histology at CUHK with 3 years of teaching experience

Teaching and Learning Dynamics
- Teaching Philosophy: Importance of a relaxed and interactive classroom environment.
- Digital Innovation: Interest in using metaverses for more engaging education.
- Student Dynamics: Observations on student openness and initial shyness in class interactions.
- Educational Relationships: Building connections with students and supporting them beyond the classroom.
- Technological Skills: Need for teachers and students to adapt to new technologies.
- Collaborative Learning: Encouraging group work and peer learning despite challenges.

Teaching Philosophy and Methods
- The lecturer's experiences and educational journey have greatly influenced their teaching style, focusing on interactive and participatory methods.
- Interactive Teaching: Prioritising student engagement, especially for complex subjects.
- Digital Spaces: Exploring the use of digital learning spaces like metaverses.
- Student Relationships: Importance of fostering a supportive environment for students.
- Peer Learning: Incorporating group presentations to enhance medical education.

Embracing Digital Learning Spaces
- The lecturer expresses a keen interest in integrating digital learning spaces to create more dynamic and effective educational experiences.
- Metaverse Potential: Recognizing the benefits of metaverses for learning.
- Skill Development: Emphasising the need for digital literacy among educators and students.
- Teamwork in Education: Promoting sustainable educational practices through collaboration.

Interactive teaching methods
- By exchanging questions and answers, students are encouraged to actively process and apply the knowledge they have learned, train their leadership skills, trigger their curiosity, and understand the key points of the subject matter.
- Peer interaction allows students to approach complex concepts from different perspectives, and are more likely to remember and retain the information as they are actively involved in the learning process.
- Collaborative problem-solving also encourages students to move beyond rote memorization and instead focus on applying and integrating knowledge.

Incorporating metaverse into teaching
- The lecturer envisions to offer students more flexibility in preparing for classes and revising challenging concepts.
- using AI-based games to make learning more enjoyable
- for students to explore the human body virtually to enhance their understanding of complex topics like anatomy.
- transcending conventional modes of knowledge dissemination. For instance, orchestrate class activities that stimulate inquisitiveness, enhancing learning outcomes as students invest more time and effort.
- By creating 3D environments that mimic real-life interactions, allowing students to chat and move flexibly, undoubtedly facilitates interpersonal connections.

Fear of adoption
- Presently, the educational landscape is traversing a phase akin to previous decades, where new technologies invariably supplant their predecessors. It is an inexorable trend. Technological advancements are perpetual, and resistance is futile. However, the current landscape can appear overwhelming, if educators find themselves inadequately equipped or time-constrained.

Creating a lasting impact
- equipping teachers and students with necessary skills to handle
- continuously generating new contents and fostering teamwork among educators and students to keep the tools updated and sustainable.

How has your personal journey influenced the way you teach?

Through diverse training experiences across various countries and under the tutelage of different mentors and supervisors, particularly within diverse cultural contexts, the lecturer is inspired to explore more effective pedagogical methodologies. The lecturer constantly contemplates the optimal approach for imparting knowledge to students. Drawing from personal experiences as a student, the lecturer empathises with the challenges they encounter. There is a consistent endeavour to view situations from their perspective, contemplating whether the content is comprehensible and conducive to effective learning. Periodically, the lecturer engages in self-reflection and introspection to refine teaching methods. Although at the nascent stage of the career, the lecturer remains committed to continuous learning and improvement.

What are your strategies to make classes more participative?

At the commencement of a class, the lecturer aims to infuse the entire ambiance with dynamism, endeavouring to instil a sense of relaxation among the students. Typically, the lecturer initiates with a simple dialogue for at least a minute before delving into the core content. This approach serves as a facile method to encourage openness and active participation. Ultimately, it proves more beneficial for the students to actively engage in tutorials rather than passively occupying seats and listening without any form of interaction or feedback. For instance, at the outset, the lecturer casually greets the students, extends a warm welcome to the class, provides a concise overview, and addresses one or two queries. This approach piques the students' interest, prompting them to ponder over the subject matter. Subsequently, the lecturer solicits feedback from the students, fostering a relaxed atmosphere.

What strategies can be implemented to address the challenges and barriers associated with adopting new technologies, such as metaverse, in education?

1. provide training and support for both teachers and students to develop the necessary skills. This may involve workshops, tutorials, and resources to ensure that everyone is confident and reduce fear.
2. a gradual approach to implementation. Starting with simple features can help users become familiar before moving on to more complex applications. This step-by-step approach allows for a smoother transition and reduces the feeling of being overwhelmed by the new technology.
3. Teachers and students should be encouraged to work together to explore and experiment with the metaverse, sharing their experiences and learning from each other to build confidence.
4. ongoing technical support and troubleshooting resources so issues that arise can be addressed promptly, minimising disruptions to the learning process.
5. highlighting how technology can enhance student engagement, provide more interactive experiences, and improve learning outcomes can help motivate both teachers and students to embrace.

How can the incorporation of group presentations and peer collaboration contribute to the enhancement of medical education, and what strategies can be employed to encourage student participation in such activities?

These activities provide students with opportunities to apply and discuss complex medical concepts, stimulate critical thinking, problem-solving skills, and effective communication, which are essential competencies for future healthcare professionals. To encourage collaboration, teachers can establish clear expectations and guidelines for group work, emphasising the value of diverse perspectives. Providing training and resources on effective communication can help students feel more confident and prepared for group activities.

Interactive teaching methods and peer interactions can serve as a precursor to group presentations, gradually building students' confidence and teamwork skills. Teachers can also offer constructive feedback and guidance throughout the process, fostering a sense of accountability and continuous improvement. Moreover, leveraging digital learning spaces can provide a unique platform for peer collaboration, creating 3D environments where students can come together, overcome difficulties, and present their work can enhance creativity.

Insights from a Food Science Lecturer with more than 15 years of teaching experience

Adapting to Educational Challenges

the complexities of modern education, the need for effective strategies to engage students and adapt to their changing learning attitudes.

- Student engagement: A persistent challenge in large classes, difficulty in motivating over 100 students to participate.
- Impact of technology: Both a tool and a challenge in modern teaching, the use of virtual worlds for engagement.
- Understanding students: Key to adapting teaching methods for better outcomes, but struggles with maintaining consistent student participation.
- Intense teaching schedule: even with 3 full hours of teaching per class, there is not enough time to clearly explain all concepts, methods of distributing content and relieving teaching pressure has to be innovated.
- Large classes: especially in large classes, interacting with students one by one would consume a lot of time. Both teachers and students seem to think large class sizes are a problem.

The Evolution of Education and Sustainability

the qualities of effective education, and the observed shift in student preferences for learning materials.

- Teaching style: Personalised approach to education.
- Evolution of teaching: From traditional to technology-integrated methods.
- Textbook reading: reluctance to read texts, even a short article, few students would participate, preference for detailed powerpoint.
- Extra resources: Unwillingness to go to the library and look up reference books.
- Compared to bachelor students, master students are more willing to read, however, their schedule is very busy, leaving little time to go to the library. Electronic versions can sometimes help.
- There have been questions received from students asking whether or not it will be sufficient to only read the powerpoint slides.
- A negative feedback loop between passive lecturing methods and teachers' exhaustive work in reproducing textbook contents through long and detailed powerpoint slides.

Teachers' Pressure

- The professor's workload includes teaching 3-4 courses per semester, spending an average of 6-9 hours per week on teaching.
- The professor's work also involves preparing and marking papers, arranging laboratory activities, and serving as an academic advisor for 40 students.
- The professor tries to maintain personal time for relaxation on weekends but often responds to student emails even during non-office hours.
- The workload has been less stressful in the current year due to teaching the same courses as the previous year.
- The professor has experienced changes in teaching assignments, leading to the need to develop new materials in previous years.
- The professor's teaching approach involves incorporating new examples, for instance, food safety problems which happened that year, and updated content into the course material.
- For basic science processes, like anatomy and physiology, it can get quite boring to teach as they are always the same every year.
- For master classes, there can be new content every year, but for bachelor courses, they are more basic.

Metaverse promoting self expression and engagement

- Freedom to walk around and explore, for example, experimenting how to make the avatar stand at the top of the screen, or discovering bugs can be interesting for some students.
- Changing clothing and gesture of their avatar, being interesting with classmates, dancing and running together seems enjoyable to students.
- Moving around helps keep students active. However, in a physical setting, if the class size is too big, it can be challenging.

Zoom challenges

- The paradox of students unwilling to turn on cameras, which can lead to loneliness and boredom, resulting in disengagement.
- However, when being asked to turn on cameras, students would respond they do not have one.
- Sometimes, students would start working on irrelevant things in parallel, others would ask for a break due to a loss of concentration.

Group interaction

- Group presentations, for instance, poster presentations with 100 students, each presenting for 5-mins, will result in a long session.
- Physically challenging, as it is too far to see what is printed on the poster in a large lecture hall, creating disengagement in the audience.
- Students can go back to look at others' work at their leisure time, however, it is difficult to secure a lecture hall that has enough surface to showcase all posters and remains open 24/7.
- It has been observed that sometimes, students specifically choose to not enrol in a class because of the requirement of group work.

Teaching pressure

- General Education: Emphasis on discussion during lessons.
- Major Courses: Priority on knowledge impartation. Despite the allocated three-hour teaching sessions, it is a daunting task to cover all topics comprehensively due to time constraints and large class sizes. This situation necessitates a selective approach to student participation.
- The large class sizes make it impractical to address individual student responses, leading to a strategy where only certain students are called upon to answer.
- Questions are posted on Blackboard a week in advance to encourage preparation. However, large class size limits individual attention, leading to selective participation, where only some students are asked to respond.
- Still, students' responses vary due to neglectance or reluctance. Some students do not check Blackboard, and others are hesitant to participate, which forces the educator to provide answers during class time.

How has the teaching style and student attitudes evolved over time?

Transitioning from traditional methods to more technology-integrated approaches. During the lecturer's own education, professors used transparency projections, and students were expected to study the textbook independently. However, the speaker observed that current students are less inclined to go to the library, look for recommended references and read books; rather, prefer relying on provided powerpoints. They expressed concern about the changing learning attitudes, noting that students are less motivated to engage in learning. Also, classes are becoming bigger and students may be hesitant to participate due to a fear of giving wrong answers.

What are the challenges faced in motivating students to participate in large lecture classes, and what strategies have been attempted?
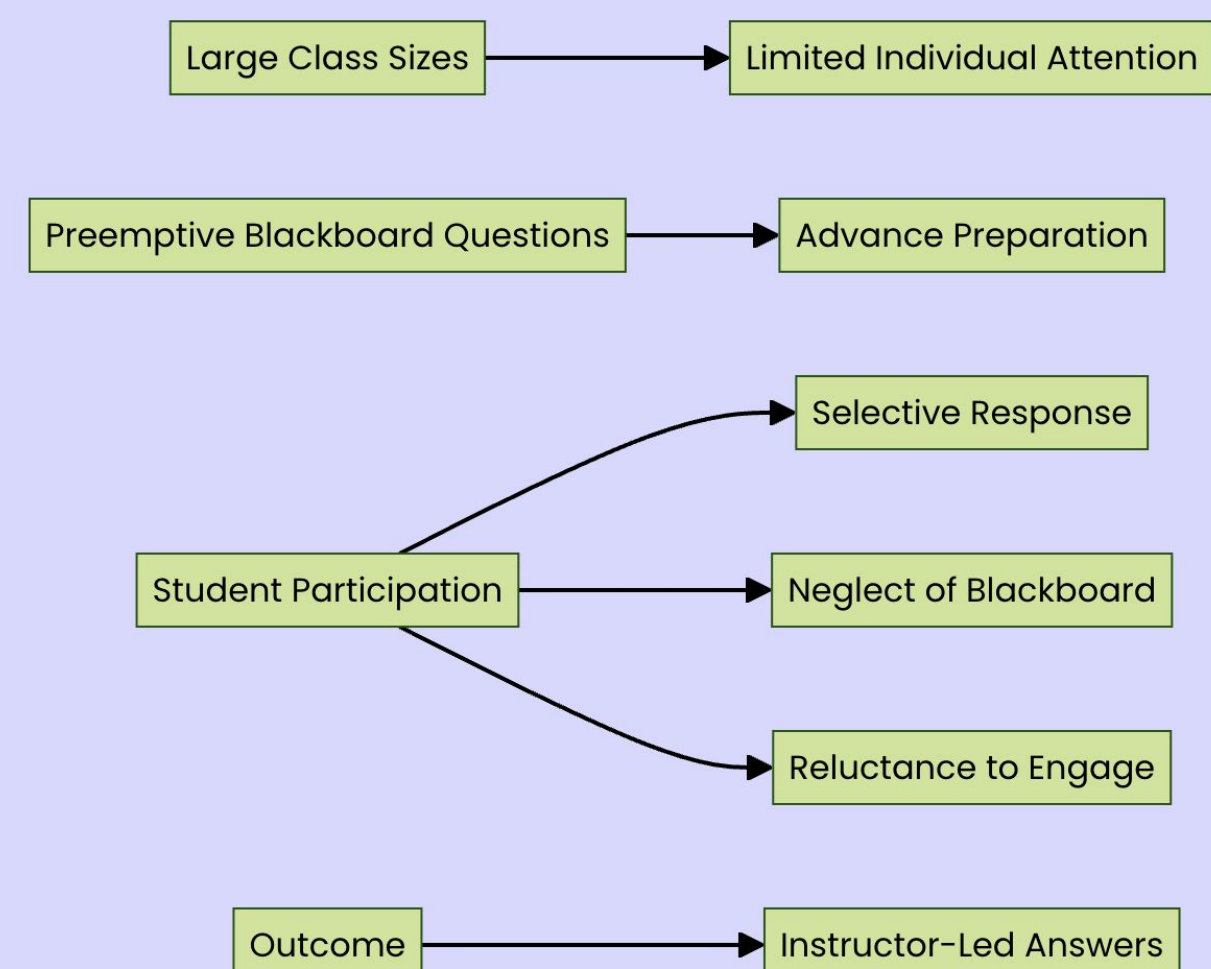
The difficulty of engaging a large number of students, lack of accountability for attendance, and students' preference for passive learning. The lecturer mentioned that it is challenging to motivate over 100 students to participate, as many do not respond to questions and may not be present in class. Students often prefer to passively receive information rather than actively engage in the learning process.

The lecturer has attempted the use of digital tools such as metaverses to to engage students, but found that some were not engaged in the activity and left the classroom. Others showed more interest as they created their own characters and moved around the virtual space. Still, concerns were expressed about the limitations of lecture settings and the difficulty of consistently engaging all students, highlighting the need for new approaches to address these challenges.

How can digital learning spaces, such as metaverses, be utilised to improve student participation and engagement in a lecture setting?

The lecturer mentioned using the metaverse to create a virtual world where students can explore, interact, and engage with the material. Allowing students to create their own characters and answering questions by moving to different areas in the virtual environment, enhancing interactivity and freedom. Also, providing opportunities for students to collaborate and present their work in a virtual hall, showcase and review posters, facilitating 24-hour access to the content and enabling them to engage with the material at their own pace.

Student Participation Challenges:

Large Class Sizes → Limited Individual Attention

Preemptive Blackboard Questions → Advance Preparation

Student Participation → Selective Response

Student Participation → Neglect of Blackboard

Student Participation → Reluctance to Engage

Outcome → Instructor-Led Answers

Insights from a Pharmacology Lecturer at CUHK from India with 16 years of teaching experience

Educational Systems in India and Hong Kong
In India:
- More strict and traditional approach
- Emphasis on in-person interaction
- Students are vocal and engaged in discussions

In Hong Kong:
- Greater flexibility and technology usage
- Students tend to be reserved, particularly in public speaking
- problems faced by students in their academic development, such as overwhelming content and issues with group tasks.

Challenges and Opportunities in Digital Learning
- A shift from traditional methods to more streamlined and multimedia-based approaches.
- teaching style and methods has evolved with the use of technology, making the teaching process more efficient
- adapting to the changing needs of students in the digital age
- Balancing traditional teaching with technology integration
- Challenges in engaging students in large digital classes
- Students' reluctance and inhibition from switching on their cameras during online classes due to privacy concerns.
- Technical issues like internet connectivity.
- highlighting the dynamic nature of education, a support system for educators, such as workshops and training, is essential for adapting to the educational environment.

High Quality Education
- Fostering a positive teacher-student relationship is crucial for effective learning, as it influences the classroom atmosphere.
- Academic performance is a key outcome and the interviewee highlights the importance of setting assessments to gauge student understanding.

- Group tasks and presentations are valuable for developing soft skills, communication, and collaboration among students, which the interviewee incorporates into their teaching schedule.
- The interviewee teaches a diverse range of class sizes, from 25 students to over 250 students, and employs various teaching methods, incorporating videos and breaks.
- the importance of addressing students by their first names and creating a personalised learning environment, fostering a community and belonging.

Cultural Differences
- The interviewee emphasises the importance of motivation and the striving nature of students in both India and Hong Kong.
- However, there is contrast in student participation and interaction
- Noting the differences in the strictness of the Indian curriculum compared to the flexibility in Hong Kong, highlighting the impact on student attendance and engagement, with the latter being lower.
- the importance of resources in education, noting the disparity between India and Hong Kong in terms of technology and classroom facilities

How has technology changed the way teachers deliver lectures?

In the past, traditional methods such as transparencies and chalkboards were commonly used. However, with the integration of technology, particularly digital tools like PowerPoint presentations and Zoom, teachers now have the ability to prepare and project content more efficiently, making the teaching process more streamlined. This has also made it easier for teachers to engage students by incorporating multimedia elements such as videos and interactive presentations to facilitate better understanding of complex concepts.
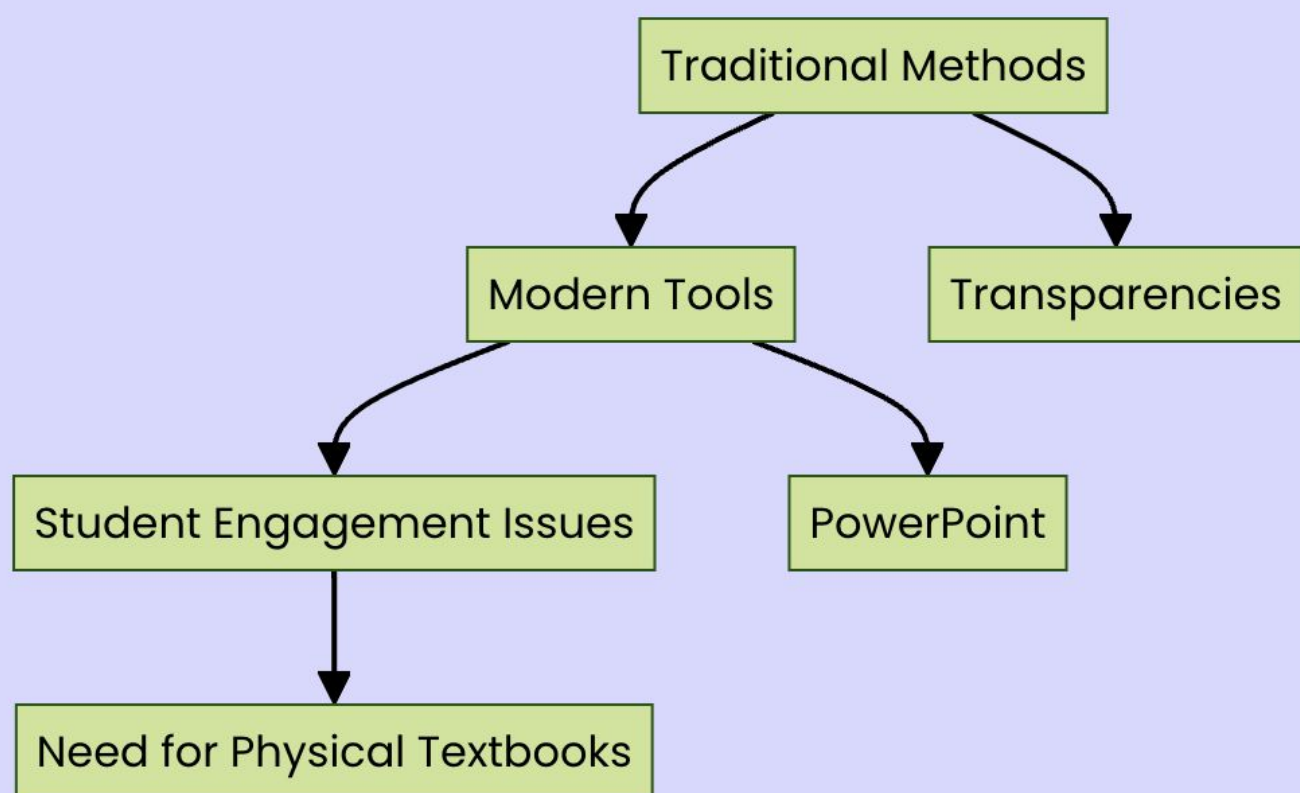
In what ways can group tasks impact students' learning environment?

Group tasks and presentations can significantly impact student collaboration, communication skills, and the sense of community in the learning environment. When students work together, they have the opportunity to develop essential soft skills beyond subject knowledge, allowing students to navigate and distribute topics, seek and respect opinions, and engage in constructive arguments.

By working in groups, students become less inhibited, as they are more comfortable asking questions and sharing their thoughts in a smaller group setting compared to a larger classroom.

By creating opportunities and regular interactions for students to build relationships with their peers, they develop a supportive environment, sharing knowledge and form friendships. This contributes to a positive classroom atmosphere and encourages students to engage actively.

Transition to Digital Tools:

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              Traditional Methods
                 /          \
           Modern Tools    Transparencies
            /        \
Student Engagement    PowerPoint
    Issues
       |
Need for Physical Textbooks
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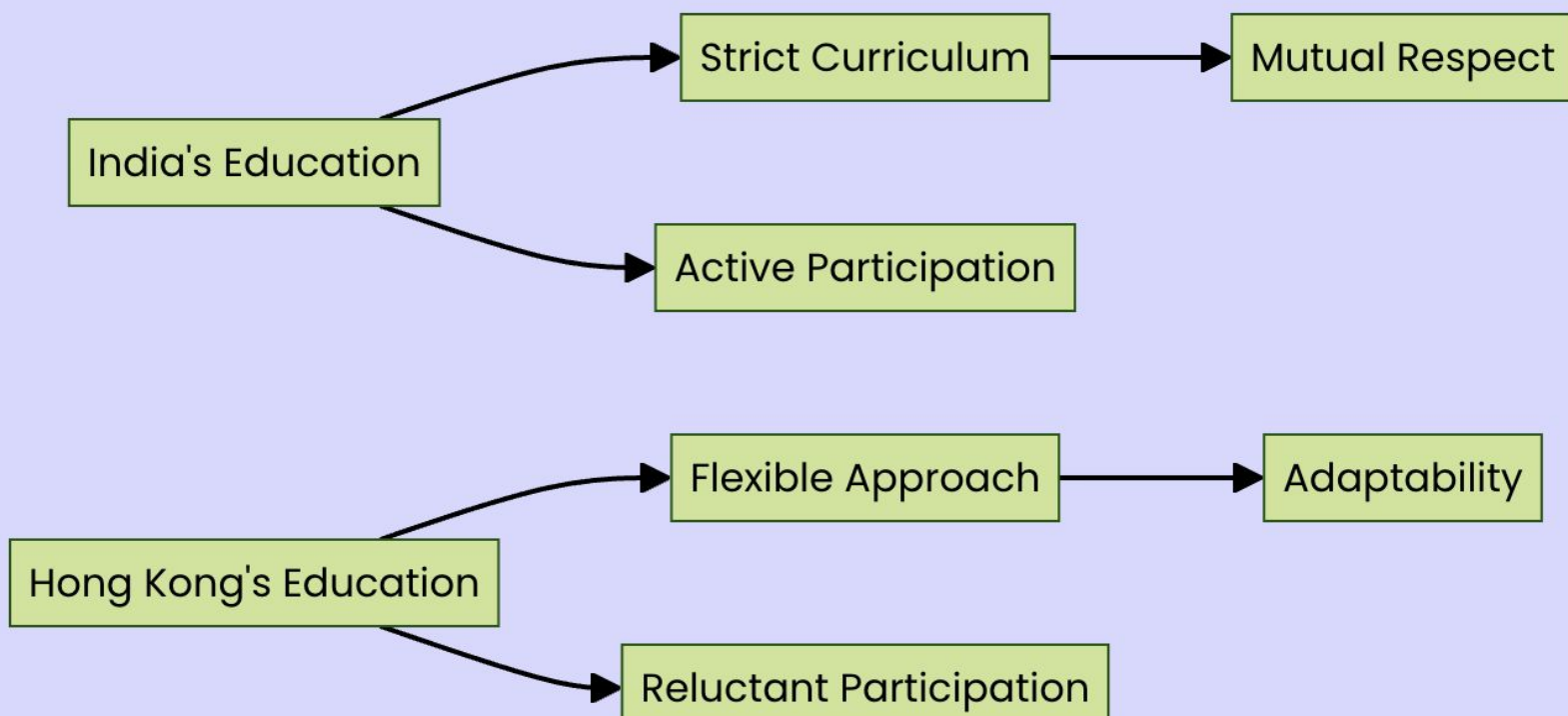
What are the differences in education between India and Hong Kong?

The interviewee highlighted significant differences in learning styles and student-teacher relationships. In India, the educational approach was described as more strict and traditional, with a focus on in-person interaction. Students in India were more vocal in class, unafraid to ask questions and engage in discussions, even in front of their peers, and were not afraid of being judged. This was attributed to cultural factors and the educational system in India, which encouraged vocal participation and open discussions, allowing students to develop strong communication skills and confidence in expressing their ideas

In Hong Kong, there was a greater emphasis on flexibility and the use of technology in education, with the use of lecture recordings and a lack of compulsion for students to attend in-person classes. The interviewee observed that students in Hong Kong were more reserved, especially when it came to speaking and participating in front of their peers. The student-teacher relationship was more closely knit, with an academic advisor scheme that facilitated a closer bond, contributing to a more personalised learning experience.

What are the challenges and benefits of using digital learning space?

One of the significant challenges is student engagement, particularly in large classes, as it can be difficult to ensure active participation and maintain students' attention over extended periods. Additionally, technological issues, such as internet connectivity and students' reluctance to switch on their cameras due to privacy concerns, can hinder effective communication and interaction. However, it provides a platform for interactive teaching, allowing for immediate feedback and personalised interactions between teachers and students, and the ability to address individual needs. Also, it enables the use of innovative teaching methods, such as virtual group tasks.

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India's Education ──> Strict Curriculum ──> Mutual Respect
                 └──> Active Participation

Hong Kong's Education ──> Flexible Approach ──> Adaptability
                     └──> Reluctant Participation
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Co-learning Space:

Using Metaverse Tools to Cooperative Design

Innovative Digital Learning Spaces

Driving Stimulus Motives in Quality of Education