InClass

HOW TO USE THE ROBOT IN SCHOOL

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Recommendations and guidelines for schools administrators, teachers, parents and students

Introduction

In the rapidly evolving landscape of education, technology plays a pivotal role in shaping learning experiences. One of the most innovative and impactful advancements is the introduction of telepresence robots. These robots are not just tools; they are gateways to inclusive and accessible education, especially for students who face challenges in traditional classroom settings due to health issues or disabilities.

Telepresence robots offer a dynamic and interactive way for students to participate in classroom activities, even from remote locations. They embody the spirit of modern education - breaking down barriers, fostering inclusivity, and embracing diversity. By facilitating real-time interaction and mobility, these robots enable students to be virtually present in the classroom, contributing to discussions, engaging in group work, and maintaining social connections with peers and teachers.

The implementation of telepresence robots, however, comes with its set of challenges and considerations. From understanding the technology to ensuring ethical practices, from budgeting to collaboration with healthcare professionals, and from training teachers and parents to deploying these robots effectively, each step requires careful planning and thoughtful execution.

This brochure aims to provide educators, administrators, and healthcare professionals with a comprehensive overview of the various aspects involved in introducing telepresence robots into educational settings. It includes practical recommendations for each stage of implementation, ensuring that this innovative technology is utilized to its fullest potential to enhance learning experiences for all students.

As we step into the future of education, let's embrace these technological advancements with an open mind and a commitment to making learning accessible to every student, regardless of their circumstances.

1. Understanding Telepresence Robots and their role in the education system

1.1. What are Telepresence Robots?

A school telepresence robot is a device equipped with video and audio that allows a child to participate in classroom activities in real time, remotely, giving them the ability to see, hear and interact with the environment without being physically present in the classroom

1.2 Benefits of using telepresence robots – why should school directors/administrators advocate for the use of telepresence robots within their schools?

Telepresence robots enable students who face physical or health-related barriers to attend school virtually, ensuring that every child has equal access to education. The robots' ability to provide real-time, interactive participation fosters a sense of belonging and inclusion, crucial for students who might otherwise feel isolated. Beyond accessibility, these robots enhance the educational experience for all students by introducing them to advanced technology, promoting digital literacy, and preparing them for a future where technology and human interaction intertwine seamlessly.

From the research carried out within the InClass project, the following benefits of using telepresence robots in the classroom emerged:

- Enhancing Accessibility for Students with Disabilities or Illnesses
- Improving Engagement and Interaction
- Promoting Inclusivity and Social Interaction
- Providing Flexibility in Education
- Preparing Students for Future Technology Integration
- Supporting Personalized Learning Experiences
- Reducing Absenteeism and Maintaining Continuity in Education

How can school directors/administrators introduce the telepresence robots to teachers and to the school community in general?

1.3 **Recommendations** on how to determine teachers to be willing to test the use of telepresence robots with their students:

1 **Educate the school community** about the capabilities and advantages of using telepresence robots for remote interaction, integration and participation: present the existing resources and the available results from various research studies, including documentation prepared within the InClass project under + Case Studies - Purpose of Telepresence Robots in Schools.

2 **Highlight success stories and practical benefits** of telepresence robots to encourage widespread acceptance within the school community (see also our Case Studies under + Case Studies). Organize presentations or create informational materials that detail these success stories, focusing on the tangible improvements in student engagement, attendance, and academic performance.

3 **Showcase real-life examples and case studies** where telepresence robots have significantly improved educational experiences for homebound students – presenting the Case Studies report developed by InClass project consortium "Case Studies" under + Case Studies.

4 **Emphasize** how these robots have **enhanced accessibility**, allowing students who cannot physically attend school to participate actively in classroom activities and maintain social connections with their peers – Student Engagement and Participation under + Case Studies document can be used as a resource.

By illustrating the positive impact and the benefits of telepresence robots through actual experiences, the school can foster a greater understanding and appreciation of this technology among educators, parents, and students.

1.4 Ethical and privacy considerations

Privacy is an important concern for teachers, parents and students when telepresence robots are involved, and **ethical considerations** are another relevant aspect when we talk about the role of telepresence robots in the education system. To encourage teachers to test and adopt telepresence robots in their teaching, it is essential to **develop and communicate clear guidelines on privacy, data security, and responsible use** of telepresence technology, such as:

- **Develop Comprehensive Privacy Policies**: Create detailed privacy policies that address how student data is collected, used, stored, and shared through telepresence robots. Ensure these policies comply with national relevant privacy laws and regulations.
- **Implement Robust Data Security Measures**: Establish strong data security protocols to protect sensitive information transmitted by telepresence robots. This includes securing data transmission channels, implementing encryption, and regularly updating security software to protect against cyber threats.
- **Educate all parties involved about Responsible Use**: Conduct training sessions for teachers, students, and parents on the responsible use of telepresence technology. This includes understanding the privacy and security aspects, appropriate behaviors while using the robots, and respecting the rights and dignity of all students.
- **Regularly Review and Update Guidelines**: Continuously monitor the effectiveness of privacy and security measures and update them as needed. Stay informed about emerging threats and advancements in data security to ensure that the guidelines remain relevant and effective.
- **Transparent Communication**: Clearly communicate these guidelines to all stakeholders, including students, parents, educators, and administrative staff. Make sure that everyone understands their roles and responsibilities in maintaining the privacy and security of the telepresence technology.

By focusing on these key areas, schools can create a secure and ethical framework for the use of telepresence robots, ensuring that the technology enhances the educational experience without compromising the privacy and security of the students. Teachers will feel more encouraged to

incorporate telepresence robots into their teaching methods, knowing that clear privacy guidelines are in place. This assurance of a secure and well-regulated environment not only eases concerns over data protection but also inspires educators to explore and utilize these innovative tools, recognizing their potential to enrich the learning experience.

2. Assessing the Needs of Sick Children

In the domain of education, addressing the needs of sick and hospitalized children presents unique challenges. These students, due to their medical conditions, often face interruptions in their schooling, which can hinder their academic progress and social development. Telepresence robots offer a promising solution to bridge this gap, allowing these children to participate in classroom activities from their homes or hospitals. This innovative technology not only ensures continuity in their education but also helps in maintaining their social connections with peers, which is crucial for their overall well-being.

To effectively meet the needs of sick children, it is essential to consider a range of special educational requirements, as well as necessary medical and safety considerations.

2.1. Special Educational Requirements

Sick and hospitalized children may have different learning needs due to their medical conditions and the limitations these impose. For instance, they might require flexible scheduling, modified lesson plans, or specialized instructional methods that accommodate their physical and emotional state. Long-term absence from school can generate a multitude of negative feelings for sick or hospitalized children, such as: depression, anxiety, the feeling of abandonment and loneliness, concerns regarding the future, the fear of not being able to keep up with the lessons taught in class, or the fear of being left behind.

2.2. Medical and Safety Considerations

The use of telepresence robots in the context of sick children involves careful consideration of their medical and safety needs. This includes ensuring that the technology does not pose any health risks and is compatible with the child's medical environment, whether at home or in a hospital.

How can these children be supported in continuing their education?

- participation on a telepresence robot motivates them to stay engaged in their education to prevent falling behind;
- telepresence robots help them to maintain a sense of social connection with their classmates;
- by providing the children with the opportunity to participate in their classroom, they have a clear idea of what they are returning to and hence a clear vision and perspective for a life after the illness;
- telepresence robots help them to strengthen their sense of autonomy and empowerment to take an active role in life.

It is essential to bring these children closer to the learning environment, encouraging them to step out of their comfort zone to support their personal, social, and academic development.

2.3. Recommendations on how schools can address the needs of sick/hospitalized children:

1. **Collaboration with healthcare professionals** is vital to understand the medical limitations and safety requirements of each child. Teachers and school administrators should work closely with medical staff to ensure that the use of telepresence robots aligns with the child's health needs and safety protocols.
2. **Regular Communication with Healthcare Providers:** Maintain ongoing communication with the children's healthcare providers. This ensures that educators are aware of any changes in the child's health status that might affect their learning or interaction with the telepresence robot.
3. **Individualized Education Plans:** Develop Individualized Education Plans for sick children, considering their specific health conditions and learning needs. These plans should include modifications or accommodations that can be facilitated through telepresence robots, such as adjusted pace of learning, modified assignments, and specialized support.
4. **Emotional and Social Support:** Recognize that sick children might also need emotional and social support as part of their learning process. Use telepresence robots to help these children participate in group activities, discussions, and social events, fostering a sense of belonging and reducing feelings of isolation.
5. **Training and Resources for Teachers:** Provide teachers with specific training and resources on how to effectively use telepresence robots. This includes understanding the technical aspects of the robots, as well as strategies for integrating these tools into their teaching to accommodate sick children.
6. **Parental Involvement:** Engage parents in the educational process. Provide them with guidance on how to set up and support the use of telepresence robots at home and involve them in the development and implementation of their child's Individualized Education Plans.
7. **Flexible Scheduling:** Offer flexible scheduling options to accommodate the varying energy levels and medical appointments of sick children. This might include recording lessons for later viewing or providing asynchronous learning materials.
8. **Health and Safety Protocols:** Implement strict health and safety protocols for the use of telepresence robots, especially if they are to be used in a hospital setting. This includes ensuring the robots are sanitized, safe for use around medical equipment, and do not interfere with the child's medical care.
9. **Psychological Support Services:** Provide access to school counselors or psychological support services. These services can be made accessible via telepresence robots, allowing sick children to receive counselling and support remotely.

By implementing these recommendations, schools can create a supportive and adaptable educational environment for sick children, ensuring that their unique needs are met and they continue to feel connected to their school community.

3. Planning and Preparation for using Telepresence Robots in Education

3.1 Budgeting for Telepresence Robot Implementation

The process of Planning and Preparation for Using Telepresence Robots in Education begins with a vital component: Budgeting for Telepresence Robot Implementation. This step involves not only assessing the initial costs for acquiring the robots but also allocating resources for ongoing maintenance, technological upgrades, and necessary technical support. Thorough and realistic budgeting is the foundation for successful implementation, ensuring that educational resources are utilized efficiently and sustainably. Therefore, careful and realistic budget planning forms the crucial bridge between the initial conceptualization and the practical phase of implementation, laying the groundwork for the effective integration of telepresence robots into the educational environment.

Here are some **key considerations and recommendations** for budgeting for the schools:

1. **Initial Cost Assessment**: Determine the initial cost of acquiring telepresence robots. This includes the purchase price of the robots and any additional equipment needed for their operation, such as cameras, microphones, and stable internet connectivity.
2. **Maintenance and Upgrades**: Allocate funds for regular maintenance and potential upgrades. Telepresence robots, like any technological tool, will require regular maintenance and occasional upgrades to ensure they continue to function effectively and benefit from the latest technological advancements.
3. **Training and Support Costs**: Factor in the costs associated with training staff and teachers to use the robots effectively. This may include hiring external trainers or purchasing training materials. Additionally, budget for ongoing technical support to resolve any issues that may arise during operation.
4. **Operational Expenses**: Consider the operational expenses, such as electricity and internet usage, which will be ongoing as long as the robots are in use.
5. **Contingency Funds**: Set aside a contingency fund to cover unexpected costs or emergencies related to the robots. This ensures that any unforeseen issues can be addressed promptly without significantly impacting the overall budget.
6. **Grants and Funding Opportunities**: Explore grants and other funding opportunities that may be available for educational technology initiatives. Many organizations and government entities offer financial support for innovative educational projects, including those involving telepresence robots.
7. **Cost-Benefit Analysis**: Conduct a cost-benefit analysis to understand the long-term value of implementing telepresence robots compared to the investment required. This analysis should take into account not only the financial aspects but also the educational benefits and improved accessibility for students who cannot attend school physically.
8. **Financial Transparency and Stakeholder Involvement**: Maintain transparency about the budgeting process and involve key stakeholders, including school administrators, teachers, and potentially the school board or parent-teacher associations, in the decision-making process.

3.2 Planning and preparation

The first step in **the planning and preparation process** is to **introduce the telepresence robot** to the hospitalized or sick child, their parents, and the teachers. This initial step is crucial to set expectations and establish a basic understanding of the technology.

Bringing the Classroom to Sick Pupils

The planning and preparation process to introduce telepresence robots in education primarily aims to seamlessly integrate sick pupils into the classroom environment. The absence of a standardized manual for this process is due to the need for a tailored approach for each child, considering their unique circumstances and needs.

Information and Formal Documents

Prior to implementation, essential information and formal documents should be prepared. Essential documents include guidelines for operation, GDPR compliance information, and technical instructions. Both teachers and parents should receive these documents to ensure clear understanding and adherence to privacy and operational protocols.

Each school should develop its own guidelines for operating telepresence robots. For this purpose, school representatives can refer to the comprehensive information provided in the document "**Selecting the Right Telepresence Robot**", developed by the InClass project partners. This document offers detailed insights into various aspects such as **Types of Telepresence Robots**, their **Features and Capabilities**, and guidance on **Customization and Adaptability** to determine the most suitable robot for specific educational needs.

GDPR Compliance Information for Telepresence Robots in Schools

- **Data Protection Officer Appointment:** Assign a Data Protection Officer (DPO) responsible for overseeing GDPR compliance related to the use of telepresence robots
- **Conducting a Data Protection Impact Assessment**: Carry out a Data Protection Impact Assessment to identify and mitigate risks related to the processing of personal data through telepresence robots
- **Data Processing Agreements**: Ensure that agreements with telepresence robot vendors include clauses that adhere to GDPR requirements, particularly regarding the processing and protection of personal data
- **Consent Forms for Students and Parents**: Develop consent forms that clearly explain how the telepresence robot will collect, use, store, and protect students' personal data. Ensure that the forms are easy to understand and explicitly seek permission for specific types of data processing
- **Regular GDPR Training for Staff**: Provide regular training for teachers and administrative staff on GDPR compliance, focusing on data protection best practices related to telepresence robots
- **Publicizing Privacy Policies**: Make the school's privacy policy, including specifics related to telepresence robot usage, easily accessible to students, parents, and staff

- **Incident Response Plan**: Develop an incident response plan to address any data breaches or GDPR compliance issues that may arise.

Example of a GDPR Compliance Form for Telepresence Robot Use in Schools:

Introduction to GDPR form

Dear Parents/Teachers and Students,

At [School Name], we are committed to embracing innovative technologies that enhance our educational environment while upholding the highest standards of data protection and privacy. As part of our initiative to integrate telepresence robots into our classrooms, it is essential to ensure compliance with the General Data Protection Regulation (GDPR).

This form is designed to provide clear and comprehensive information about how personal data will be collected, processed, and protected in the context of using telepresence robots. Our goal is to maintain transparency and safeguard the privacy rights of our students.

Below, you will find detailed explanations regarding the types of data collected by the telepresence robots, the purposes of data collection, how the data is processed and stored, and your rights as data subjects under GDPR. We request that you carefully review this information and provide your consent for your child to participate in this innovative educational experience.

We believe that telepresence robots offer a unique opportunity for enriched learning and inclusivity. Your support and understanding in this matter are crucial in helping us move forward with this initiative responsibly and in compliance with GDPR standards.

Please do not hesitate to contact our Data Protection Officer, [DPO's Name], should you have any questions or concerns regarding this form or our data protection practices.

Thank you for your cooperation and trust in [School Name].

Sincerely,

[Principal's Name]

[School Name]

Example of GDPR form

School Name: [School Name]

Data Protection Officer: [DPO's Name and Contact Information]

Purpose of Data Collection: Describe how the telepresence robot will use personal data (e.g., video, audio, student interactions).

Type of Data Collected: List the types of personal data the robot will collect (e.g., images, audio, names).

Data Processing Details: Explain how the data will be processed, stored, and who will have access to it.

Duration of Data Storage: Specify how long the data will be stored and the criteria for its deletion.

Consent: A section for parents/guardians to give their consent for their child's data to be used as described.

Withdrawal of Consent: Information on how parents/guardians can withdraw their consent at any time.

Data Subject Rights: Inform about the rights of individuals under GDPR, including the right to access, rectify, and erase their personal data.

Signature and Date: Spaces for the parent/guardian and, if appropriate, the student to sign and date the form.

This approach and form example provide a structured way for schools to address GDPR compliance when implementing telepresence robots, ensuring that the privacy and rights of students are adequately protected.

Preparation: Getting Ready for School

Preparation involves ensuring both the technology and the pupils are ready for this new mode of learning. This includes familiarizing the child with the technology, setting expectations, and ensuring all necessary equipment is functional and accessible. All this technical aspects will be addressed in the next section: Teacher and Parents Training and instructions for children.

3.3 Main Recommendations:

1. **Prepare a comprehensive budget** that includes initial costs, maintenance, and potential upgrades.
2. **Define specific, measurable goals** for the integration of telepresence robots, such as improving attendance and engagement for remote students.
3. **Ensure compliance with educational and privacy laws and standards**, particularly in relation to student data.

4. Teacher and Parents Training

The integration of telepresence robots into educational settings necessitates dedicated training and guidelines for both teachers and parents. This training is essential to ensure that all parties are equipped with the knowledge and skills required to effectively use this technology. It addresses not only the operational aspects of the robots but also the pedagogical strategies (see also our deliverable on Empathy under + Case Studies).

4.1 Training Educators to Use Telepresence Robots

The training of teachers and educators focuses on familiarizing teachers with the technical functionalities of telepresence robots and how they can be integrated into the classroom. This training should cover various aspects:

Technical Proficiency: Educators must be adept at operating the telepresence robots, understanding their functionalities and troubleshooting basic issues. However, much of the daily operation can also be delegated to the fellow students, who will often be both more technologically savvy and excited to take over, and being responsible for the maintenance of the robot increases also the sense of community for both the remote and the onsite children – see Case Studies.

Pedagogical Integration: Training should also focus on how to integrate these robots into existing classroom activities. This includes adapting teaching methods to engage students both in the classroom and those participating via robots.

Interactive Techniques: Teachers should learn interactive techniques that can be employed through telepresence robots to ensure that remote students are as engaged as their in-class peers.

Monitoring and Feedback: Training on how to monitor student progress through telepresence technology and provide feedback effectively.

To equip teachers with thorough and effective training for using telepresence robots, we have developed a set of **specific guidelines**. These guidelines are designed to cover all key aspects of telepresence technology, from basic operation and navigation to integrating these tools into existing teaching methodologies. This comprehensive approach to training ensures that educators are well-prepared to utilize telepresence robots effectively, enhancing the overall educational experience for students.

4.1.1 Guidelines for teachers

Classroom Guidelines for Telepresence Robot:

- **Location**: Position the robot close to the teacher to facilitate better interaction and visibility.
- **Speaking Rules**: Encourage taking turns while speaking to avoid overlapping conversations and ensure clarity.
- **Robot Navigation**: Maintain a clear path in the classroom to allow the robot to move freely.

- **Visual Accessibility**: Be aware that viewing the smartboard or videos through the robot's camera might be challenging.
- **Sound Awareness**: Pay attention to the robot's sound quality to ensure clear communication.
- **Group Work**: Prioritize group activities as they are more conducive for participation via the robot.
- **Daily Charging**: Ensure the robot is charged daily; designate a 'parking spot' for this purpose
- **Robot Buddy**: Assign a fellow student to keep a close eye on possible issues that may arise for the remote student, re-establish the internet connection if it gets lost etc.
- **Regular Updates**: Keep the robot's software and hardware up to date for optimal performance.

Appoint a dedicated telepresence coordinator, ideally a teacher with a keen interest in the technology. This coordinator will be responsible for:

- Collaborating with the school team
- Liaising with the student and their parents
- Establishing classroom routines
- Managing the schedule and facilitating gradual exposure to the robot
- Coordinating the 'Robot Buddies' program
- Overseeing the 'plug and play' aspects of the robot's operation.

Classroom Management:

- Teachers should share materials with students before the lesson (for spontaneous handouts, make sure that a picture of the handout is sent by a fellow student to the remote student, for instance via social media)
- Set clear goals and criteria for each activity
- Keep presentations short, structured, and varied, including group and pair work
- Integrate robot movement into the teaching process
- Conclude each lesson with a 5-10 minute wrap-up and a farewell.

Teachers can also use activities like the "**Robot Buddies**" exercise, which is designed to help students understand and empathize with their peers using a telepresence robot.

Robot Buddies Exercise: How to be a Good Robot Buddy?

Objective: The exercise aims to foster empathy and understanding among students for their peers who are attending class via a telepresence robot. It encourages them to put themselves in the shoes of these remote students and consider their experiences and challenges.

Step 1: Empathy Building

- Ask students to imagine themselves in the position of their friend who is using the telepresence robot.
- Prompt them to think about how they would feel in this situation.
- Encourage open discussion about these feelings to build empathy and understanding.

Step 2: Identifying Positive Actions

- Have students brainstorm what actions or behaviors would be helpful and "nice" to a student attending via a robot.
- Encourage them to think about ways they can make their remote classmates feel included and valued during class.

Step 3: Recognizing Challenges

- Discuss what could be difficult for a student attending class through a telepresence robot.
- Invite students to consider potential obstacles, such as participating in certain activities or fully engaging with the class.

Step 4: Developing Action Plans

- Based on the discussion, have students come up with specific actions or strategies they can implement to be a good Robot Buddy.
- These might include specific ways to interact with the robot, including the remote student in group work, or assisting with navigation in the classroom.

Step 5: Reflection and Feedback

- After implementing their strategies, encourage students to reflect on their experiences as a Robot Buddy.
- Create an opportunity for them to share feedback on what worked well and what could be improved.

To ensure smooth functioning, a set of classroom rules and tasks should be established:

Example of class rules and tasks for telepresence robots use

- Speak one at a time to minimize noise
- Avoid leaving the telepresence robot user feeling isolated
- Keep the classroom path clear for the robot's movement
- Help by opening doors and clearing obstacles for the robot
- Safely place the robot on and off tables, ensuring it is locked on the mobile screen when on a table.
- If the robot's image freezes, guide your colleague to log out and call again, or check the Wi-Fi connection.
- Charge the cell phone and robot daily
- Make sure the robot is set up and ready each morning
- Share your experiences as a "robot buddy" with others
- Plan break-time activities for the remote student.

Our studies have also shown that simply asking the student on the telepresence robot in public what issues they are facing immediately raises the empathy towards the student and fosters more inclusion (see our Empathy Deliverable under + Case Studies).

As teachers will become more adept in incorporating these robots, they will not only facilitate uninterrupted education for students unable to attend in person but also gain valuable experience in blending traditional and digital teaching methods. We encourage educators to apply the knowledge and strategies learned, adapt to feedback, and continue to evolve their teaching practices, ensuring every student receives a rich, engaging, and accessible education.

4.2 Training parents to use telepresence robots

Parents play an instrumental role in facilitating their children's use of telepresence robots, especially when the child is accessing school from home due to illness or other reasons. Their understanding and support is very important in creating an favourable environment to remote learning.

Recommendations for schools to Implementing Parent Education:

- Develop easy-to-understand guides or handbooks for parents
- Organize informational sessions for parents to understand the benefits and workings of telepresence robots
- Provide a platform for parents to ask questions and voice concerns
- Offer ongoing technical support and resources for troubleshooting and maintenance.

4.2.1 Guidelines for parents in supporting telepresence robot use

This version of the guidelines aims to provide clear and supportive instructions for parents, ensuring they can effectively assist their child in using the telepresence robot while maintaining a positive learning environment

- Assist your child in setting up an appropriate and comfortable workspace for learning
- Ensure that the child logs in punctually and follows the school's schedule
- Aid the child in preparing all necessary school materials in advance
- If you need to be present in the room during class, subtly make your presence known to the teacher and classmates, such as with a simple wave
- Be prepared to assist in contacting the teacher should any issues arise
- Maintain a positive and supportive attitude towards using the robot and the school in general, addressing any concerns directly with the teachers
- Be mindful of maintaining a balance, respecting the space and independence your child needs for learning.

By equipping parents with the necessary knowledge and resources, schools can ensure a smoother and more effective use of telepresence robots, thereby enhancing the educational experience for students who need to use these innovative tools.

Parents should also make sure that the student recognizes the significance of setting up their own workspace and preparing for their remote classes by connecting through the telepresence robot. Parents should provide assistance to their child in preparing for online classes.

Below are some guidelines that can help the student prepare for remote classes when using the telepresence robot.

4.2.2 Guidelines for pupils in supporting telepresence robot use

Setting Up The Workspace for Online Learning – this is very important

- Ensure a strong Wi-Fi connection
- Choose a location away from windows to avoid backlighting
- Sit at a desk or a similar setup for a focused environment
- Practice good digital behavior and etiquette
- Prepare your PC and headset in advance
- Gather all necessary materials like books, pencils, and have passwords handy
- Keep your daily schedule, including break times, close by
- Minimize distractions and background noise in your learning area
- Always aim to log in on time for your classes.

5. Collaboration with Healthcare Professionals

Integrating telepresence robots in schools, especially for assisting sick children, necessitates a strong collaboration with healthcare professionals. This collaboration is vital to ensure that the implementation of this technology aligns with the medical needs and safety of students.

The collaboration with medical staff forms a bridge between the educational and healthcare sectors. By partnering with healthcare professionals, schools can gain valuable insights into the specific needs and limitations of sick children. This understanding is necessary in customizing the use of telepresence robots to provide an inclusive and safe educational experience.

Healthcare professionals can guide schools on how to integrate these robots in a way that does not disrupt the students' medical routines or interfere with medical equipment. They can also provide essential advice on creating an encouraging learning environment for children who might be attending classes from a hospital or a home setting tailored to medical needs.

Moreover, addressing consent and privacy considerations is a critical aspect of this collaboration. Schools must navigate the complexities of data privacy, especially concerning sensitive medical information. The involvement of healthcare professionals ensures that the school's approach to using telepresence robots is in compliance with legal and ethical standards, safeguarding the privacy and security of student information.

Recommendations:

Partnering with Medical Staff: Establish partnerships with medical institutions for guidance on health-related aspects of using telepresence robots. This collaboration can offer insights into the specific needs of sick children, ensuring that the use of telepresence robots supports their health and educational goals.

Incorporating Health and Safety Measures: Implement health and safety protocols specific to the use of telepresence robots in educational settings. This includes ensuring that the technology does not interfere with medical equipment and adheres to health standards.

Consent and Privacy Considerations: Obtain informed consent from parents or guardians and uphold strict privacy standards related to telepresence robot usage. Schools must comply with laws such as GDPR and ensure the confidentiality of student information.

By working closely with healthcare professionals, schools can ensure that their health and safety measures for telepresence robots are medically sound, tailored to the needs of individual students, and effective in maintaining a safe learning environment. Incorporating health and safety measures for the use of telepresence robots at the school level involves a multifaceted approach.

5.1. Developing Health and Safety Protocols through

- **Joint Workshops:** Organize workshops with healthcare professionals to develop health and safety protocols for telepresence robots. These protocols should address potential health risks and ensure the robots are safe for use around students, especially those with specific health conditions.
- **Customized Health Guidelines:** Work with medical experts to create guidelines that consider the health implications of using telepresence robots. This might include protocols for sanitizing the robots, especially if they are used by or around immunocompromised students.
- **Mental Health Considerations:** Collaborate with mental health professionals to understand the psychological impact of prolonged robot use on students and develop strategies to mitigate any negative effects.

Implementing Safety Measures

- **Robot Design and Functionality**: Consult with healthcare professionals to ensure the design and functionality of the robots meet health and safety standards. This could involve ergonomic considerations to prevent strain or injury.
- **Emergency Health Response**: Develop an emergency response plan in collaboration with healthcare experts. This plan should outline steps to take if a student has a health crisis while interacting with the robot.
- **Health Monitoring**: Implement health monitoring protocols, where appropriate, to observe the effects of prolonged use of telepresence robots on students' physical and mental well-being.

Example of a Safety Protocol in Collaboration with Healthcare Professionals

Protocol Title: Safe Use of Telepresence Robots for Students with….

Objective of the protocol: To ensure the safe and effective use of telepresence robots in a school setting, catering to students with diverse health needs, including those with physical, sensory, or cognitive impairments.

Collaboration Steps:

Health Assessment Collaboration: Coordinate with healthcare professionals to assess any potential health risks associated with using telepresence robots for students with various health conditions. This includes understanding any limitations or precautions that need to be taken for students with physical disabilities, sensory impairments (like low vision or hearing), or cognitive challenges.

Customized Safety Guidelines: Develop safety guidelines tailored to these diverse needs. For instance, for students with mobility issues, ensure the robot's navigation does not pose any physical barriers; for sensory impairments, adjust the audio-visual features of the robot to be more accommodating.

Environment Adaptation: Modify the school environment where necessary to ensure safe interaction with the robots. This might include creating designated pathways for the robots that are wide and clear of obstacles, or setting up specific areas in the classroom where the robot can be stationed without causing disruption.

Staff and Student Training: Conduct training sessions for teachers and students on these safety guidelines. The training should cover how to interact with the robots, understanding the needs of their peers using these robots, and what to do in case of a technical or medical emergency.

Regular Safety Reviews: Establish a protocol for regular reviews and updates of the safety guidelines. This should be done in collaboration with healthcare professionals to adapt to any new health and safety findings or technological advancements.

This safety protocol example illustrates how schools can work with healthcare professionals to create a safe and inclusive environment for all students using telepresence robots, taking into account a range of health considerations.

Example of Informed Consent Form for the Use of Telepresence Robots

Introduction

This consent form is to inform parents/guardians and students about the use of telepresence robots at [Your School's Name] and to obtain your consent for your child's participation in this program.

Description of Telepresence Robot Use

Telepresence robots are remote-controlled, mobile devices that enable students to participate in classroom activities virtually. They are equipped with a camera, speaker, microphone, and screen to facilitate real-time participation.

Purpose of Use

The telepresence robot will be used to support students who are unable to physically attend school due to health reasons, distance, or other factors, ensuring they remain connected with their classes and peers.

Data Collection and Privacy

The robot will transmit audio and video data for the purpose of classroom participation. We adhere to strict data privacy policies to protect the confidentiality and integrity of student information.

Risks and Benefits

The primary benefit of using a telepresence robot is the continued educational engagement of students who are absent from school. There are minimal risks associated with its use, primarily related to data privacy, which we mitigate through robust security protocols.

Parent/Guardian and Student Consent

I/we, the undersigned, have read and understood the above information about the use of telepresence robots at [Your School's Name].

I/we give consent for my/our child, [Child's Name], to participate in the telepresence robot program.

I/we understand that I/we can withdraw this consent at any time.

Parent/Guardian Signature: _____

Date: _____

Student Signature (if appropriate): _____

Date: _____

Thank you for your cooperation and support in enhancing our educational offerings through technology.

[Your School's Name]

Note: This is a basic template and should be customized according to the specific needs and legal requirements of your school or educational institution. Always consult with legal experts to ensure compliance with local laws and regulations, especially concerning data protection and privacy.

6. Telepresence Robot Deployment

Deploying telepresence robots within educational settings is a multifaceted process that extends beyond the technical setup. It encompasses ensuring that the technology is seamlessly integrated into the learning environment and is accessible to all students, including those who might not be physically present in the classroom.

Deployment Strategy and Considerations

The deployment of telepresence robots in schools is not just about placing technology in classrooms. It involves a strategic approach to make sure that the technology is functional, user-friendly, and, most importantly, enhances the learning experience for students. This includes establishing protocols for the regular maintenance and updating of the robots, ensuring that they are always ready for use and equipped with the latest software and features.

One of the key challenges in deploying telepresence robots is to ensure that they are accessible and beneficial to all students. This means not only having a strong and reliable internet connection but also considering the user interface and the ease of use for students who may have varying levels of technical proficiency. Schools need to ensure that students, regardless of their location or circumstance, can access and effectively utilize the telepresence robots, making the technology a bridge rather than a barrier in education.

In addition, providing robust technical support is really needed. Teachers and staff should have immediate access to technical assistance to resolve any issues swiftly, ensuring that the use of telepresence robots does not disrupt the educational process but rather enhance it. The success of deploying these robots also relies heavily on the training and preparedness of educators and parents, linking back to the themes discussed in Section 4. This interconnectedness highlights the importance of a holistic approach to the implementation of telepresence robots in schools.

Recommendations for schools:

Setting Up and Maintaining Robots: Schools need to establish protocols for the setup and ongoing maintenance of the robots. This includes regular checks to ensure they are operational and meet the required educational standards.

Troubleshooting and Technical Support: Providing robust technical support is key to resolving any issues promptly. Teachers and staff should have access to immediate technical assistance to minimize disruptions in the classroom.

Ensuring Accessibility and Connectivity: Schools need to guarantee that all students, regardless of their location or circumstance, can access and effectively utilize the telepresence robots. This includes ensuring strong internet connectivity and making the technology user-friendly.

7. CONCLUSIONS

From the InClass paper "Understanding Potential Obstacles to Introducing Telepresence Robots into Schools under + Case Studies," it is evident that while telepresence robots present a significant opportunity for enhancing inclusive and accessible education, their integration into schools involves careful consideration of various aspects.

These include understanding the technology, ethical practices, budgeting, healthcare professional collaboration, teacher and parent training, and effective deployment. Each of these facets plays a critical role in ensuring that telepresence robots are not just a technological addition, but a meaningful tool in the educational landscape, addressing the diverse needs of all students, especially those facing physical or health-related challenges. By embracing these guidelines and recommendations, schools can navigate potential obstacles and leverage telepresence robots to their fullest potential, enriching the educational experience for every student.