Report on Visits to Patrocinio de San José and Colegio Madres Concepcionistas Princesa

José Ángel Ávila Rodríguez (European Inventor Award 2017)

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1. Introduction:

As part of the European Patent Office's (EPO) dedication to fostering innovation and inspiring future generations, I had the privilege of visiting two outstanding educational institutions in Madrid: Patrocinio de San José on February 6th and Colegio Madres Concepcionistas Princesa on February 7th, 2025. These visits provided a unique opportunity to engage with students, share insights from my career in space exploration, and discuss the significance of scientific curiosity, innovation, and the role of intellectual property in technological progress.

My presentations were centred around the importance of STEM education, the multidisciplinary nature of complex engineering projects, and the necessity of protecting innovation through patents. Through interactive discussions, engaging demonstrations, and personal anecdotes, I aimed to ignite curiosity and encourage students to explore careers in science and technology.

2. Visit Details

Patrocinio de San José (February 6th, 2025)

Location: C. de Edgar Neville, 24, Tetuán, 28020 Madrid, Spain

Audience:

- Over 300 students from the third and fourth courses of "Educación Secundaria Obligatoria" (9th – 10th grade, ages 14-16)
- Over 200 students from the first and second courses of "Bachillerato" (11th – 12th grade, ages 16-18)
- A focused discussion with a smaller group of 50 students, primarily female, who demonstrated a deep passion for space science and engineering

The visit included a keynote speech emphasizing the importance of women in STEM and the critical role of humanitarian subjects in major technological advancements. This was followed by interactive discussions, where students posed insightful questions about space technology, my professional journey, and broader scientific challenges.

Total Reach: Approximately 550 students

Colegio Madres Concepcionistas Princesa (February 7th, 2025)

Location: Calle de la Princesa, 19, Moncloa - Aravaca, 28013 Madrid, Spain
Audience:

- Over 400 students from 9th – 12th grade (ages 14-18) in a large assembly session
- A second session with approximately 200 students from 7th –8th grade (ages 12-14)
- Roundtable discussions with senior students (ages 16-18) considering university and career options
- A dedicated session with 50 female students (ages 13-15) with a keen interest in space and science

This visit was marked by high student engagement, with intense curiosity and thought-provoking questions on science, engineering, and even philosophical and personal matters. Many students continued discussions during their break, reflecting their eagerness to explore scientific and technological concepts further.

Total Reach: Approximately 650 students

3. Engaging Activities for Simplifying Complex Technologies:

To make intricate scientific and engineering concepts more accessible, I employed various interactive methods:

- **Dynamic Presentations**: Visual aids such as videos on the European Patent Office, European Space Agency, and Galileo (the European satellite navigation system) were used to illustrate the principles of satellite navigation and the importance of protecting ideas through patents.
- **Interactive Demonstrations**: Practical examples, such as explaining how wireless networks operate, were conducted with the active participation of students. These demonstrations highlighted the real-world applications of theoretical knowledge.
- **Hands-On Learning Through Games**: Students participated in games designed to teach fundamental concepts of modern technology. Rewards, such as space-themed goodies, were distributed not only to those who answered questions correctly but also to those who displayed curiosity and the courage to ask questions.
- **Highlighting Women's Contributions**: Specific activities showcased inventions by women, emphasizing their role in shaping technological advancements and inspiring young girls to pursue careers in STEM fields.
- **Encouraging Inquiry**: Students were motivated to ask questions, with the message that curiosity is a cornerstone of innovation. Acknowledging when they did not understand something was framed as a positive step towards learning.

4. Key Messages Delivered:

Throughout both visits, I shared key insights to inspire students:

- **The Power of Learning and Curiosity:** Developing the ability to learn and nurturing curiosity is the foundation of innovation. Education should not be about memorizing facts but about questioning, exploring, and thinking critically.
- **Pursuing Passion and Personal Fulfilment:** Success and fulfilment stem from pursuing one's interests, not just choosing careers based on market trends. Genuine enthusiasm leads to excellence.
- **The Importance of Critical Thinking:** In an era of digital automation, students must think critically, verify information, and challenge assumptions. Questioning the status quo leads to breakthroughs.
- **Physics in Everyday Life:** Scientific principles govern our daily lives. I demonstrated how complex concepts apply to real-world technologies such as satellite navigation and wireless communication, making science tangible.
- **Women in Science and Engineering:** Encouraging female participation in STEM is essential. I shared inspiring stories of pioneering women in science and technology to motivate students to break barriers.
- **Endless Opportunities in Science and Technology:** The evolving world of technology offers numerous career paths. Students should remain open to diverse opportunities and adapt to emerging fields.
- **Collaboration and Teamwork:** Major scientific and technological advancements require interdisciplinary collaboration. Engineers, scientists, economists, and even artists contribute to innovation.
- **The Role of Europe in Innovation:** European initiatives like Erasmus and Galileo showcase the power of cooperation in research, cultural exchange, and technological progress.
- **The Value of Languages:** Learning new languages broadens cultural understanding and enhances communication, offering more than just professional advantages.
- **Protecting Innovation Through Intellectual Property:** The European Patent Office plays a critical role in safeguarding ideas and ensuring innovators receive the recognition and protection they deserve.
- **Adapting to a Changing World:** Continuous learning is key. The technologies of today will evolve, and students must be prepared to embrace lifelong education and adaptability.

5. Impact on Students:

The enthusiasm and engagement of the students were truly inspiring. Key observations from the visits include:

- **Elevated Interest in STEM:** Many students expressed newfound enthusiasm for science and technology, with deep curiosity about space travel, atomic clocks, and the principles of relativity.
- **Cross-Disciplinary Curiosity:** Students showed strong interest in how STEM fields interact with disciplines like law, economics, and psychology.
- **Encouragement to Dream:** The sessions reinforced the importance of ambition, perseverance, and creative thinking in shaping the future.
- **Active Participation:** The interactive format encouraged engagement, boosting students' confidence in their ability to ask questions and explore new ideas.
- **Teacher and Administrator Feedback:** Educators highlighted the value of such engagements, noting a marked increase in student curiosity and motivation.

6. Conclusions:

The visits to Patrocinio de San José and Colegio Madres Concepcionistas Princesa were immensely successful. The positive impact on students, reflected in their curiosity and active participation, reaffirmed the importance of promoting STEM education, critical thinking, and international collaboration.

Both schools expressed their appreciation for the visit and the European Patent Office's role in fostering scientific awareness and intellectual property education. Given the enthusiasm shown, future engagements remain a priority, as they play a vital role in inspiring the next generation of innovators.

7. Pictures from both visits

Patrocinio de San José on February 6th, 2025

View of the Assembly Hall

Colegio Madres Concepcionistas Princesa on February 7th, 2025

Discussing with some of the students


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Posing with one of the students that joined at the end of the talk

Example of some of the prizes given to students participating in the games (one of the several prizes given to female students). Every team got space bags and shirts and the captain and leader polo shirts with ESA related motives.

8. Social Media Mentions

8.1 Announcements and highlights from the visit to Patrocinio de San José

On X (formerly Twitter):

- https://x.com/patrociniosj/status/1891772567205155032?mx=2
- https://x.com/patrociniosj/status/1887470280299127093?s=46&mx=2
- https://x.com/patrociniosj/status/1887470286515155041?s=46
- https://x.com/patrociniosj/status/1887470289069502923?s=46

On the website of Patrocinio de San José:

https://www.patrociniosanjose.org/la-ciencia-como-vocacion-la-inspiradora-visita-de-jose-angel-avila-al-patrocinio-de-san-jose/

COLEGIO PATROCINIO DE SAN JOSÉ

18 FEB LA CIENCIA COMO VOCACIÓN: LA INSPIRADORA VISITA DE JOSÉ ÁNGEL ÁVILA AL PATROCINIO DE SAN JOSÉ

Posted at 09:48h in Colegio by admin

La semana pasada, tuvimos el privilegio de recibir en el colegio a José Ángel Ávila, ingeniero galardonado por la Oficina Europea de Patentes con el premio "Inventor Europeo 2017", quien compartió con nuestros alumnos una charla inspiradora sobre la importancia de fomentar las vocaciones científicas, especialmente entre las adolescentes. Su mensaje fue claro: el camino STEM (Ciencia, Tecnología, Ingeniería y Matemáticas) es clave para construir un futuro más diverso y equitativo.

Durante su conferencia, José Ángel nos hizo viajar a través del conocimiento científico, mencionando figuras icónicas como Carl Sagan, quien nos enseñó a mirar más allá de nuestro planeta y a cuestionarnos sobre los misterios del universo. Su forma de transmitir la pasión por la Ciencia dejó huella en nuestros estudiantes.

Uno de los temas que más llamó la atención fue la relevancia del bienestar mental en el espacio. José Ángel destacó el papel fundamental de los psicólogos en las misiones espaciales, pues la preparación física no es lo único importante para afrontar los desafíos del cosmos. Además, abordó la relación entre el acceso a la información, la inteligencia artificial y la ciencia de datos, temas de gran interés para nuestros alumnos.

Para cerrar, nos dejó una reflexión clave: el pensamiento crítico es fundamental en la Ciencia, y la vocación es la energía que nos impulsa a enfrentar los retos del futuro.

Desde el Patrocinio de San José queremos agradecer a José Ángel Ávila por su inspiradora visita. ¡Esperamos verte de nuevo pronto!

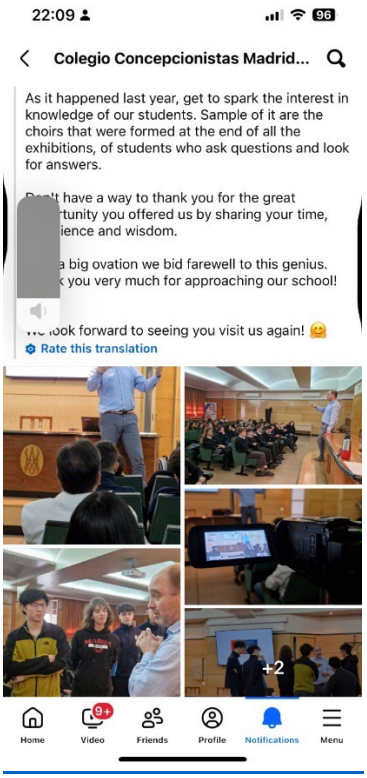
Este evento fue patrocinado por la Oficina Europea de Patentes (@EPOorg).

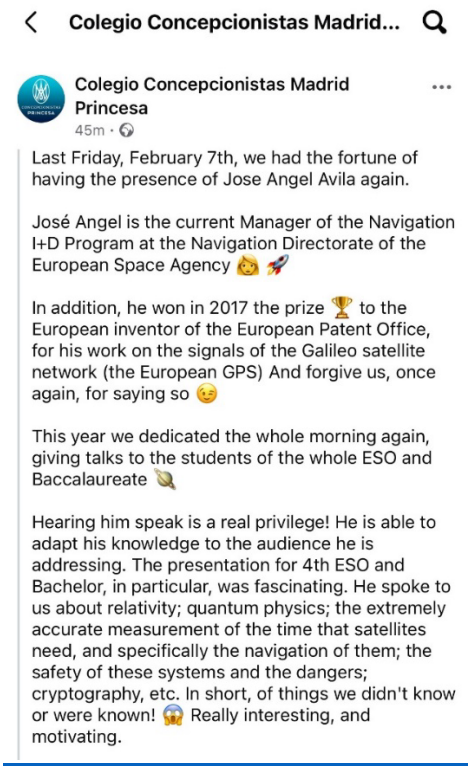
Volver al consentimiento

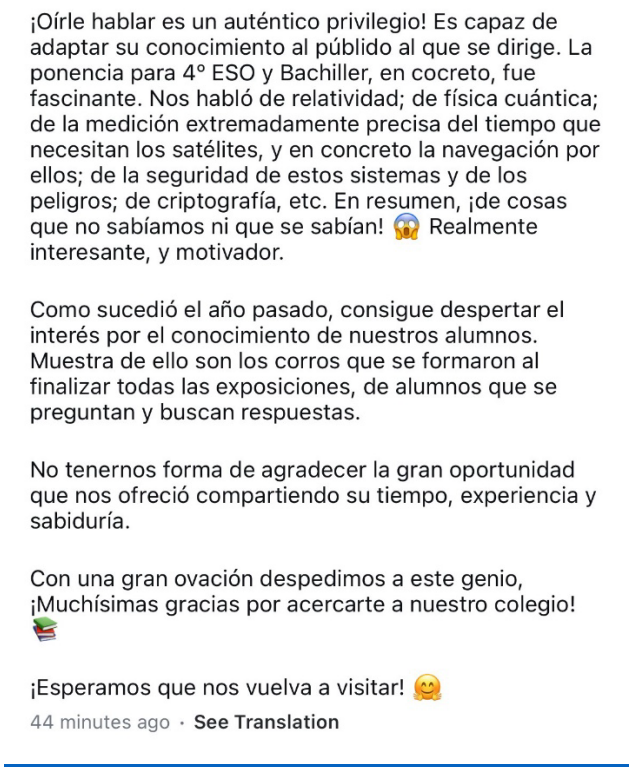
8.2 Announcements and highlights from the visit to Colegio Madres Concepcionistas Princesa

On Instagram:

https://www.instagram.com/p/DGL_fUhguAB/?igsh=MXQxN2JyMGMxOG53cQ%3D%3D&img_index=1







¡Oírle hablar es un auténtico privilegio! Es capaz de adaptar su conocimiento al públido al que se dirige. La ponencia para 4º ESO y Bachiller, en cocreto, fue fascinante. Nos habló de relatividad; de física cuántica; de la medición extremadamente precisa del tiempo que necesitan los satélites, y en concreto la navegación por ellos; de la seguridad de estos sistemas y de los peligros; de criptografía, etc. En resumen, ¡de cosas que no sabíamos ni que se sabían! 😱 Realmente interesante, y motivador.

Como sucedió el año pasado, consigue despertar el interés por el conocimiento de nuestros alumnos. Muestra de ello son los corros que se formaron al finalizar todas las exposiciones, de alumnos que se preguntan y buscan respuestas.

No tenernos forma de agradecer la gran oportunidad que nos ofreció compartiendo su tiempo, experiencia y sabiduría.

Con una gran ovación despedimos a este genio, ¡Muchísimas gracias por acercarte a nuestro colegio! 📚

¡Esperamos que nos vuelva a visitar! 🤗

44 minutes ago · **See Translation**

On Facebook:

https://www.facebook.com/100063736441547/posts/1174875377980333/?rdid=MhhDFjeyOQTeu3VP#

These engagements further amplified the impact of the visits, spreading the key messages beyond the classrooms to a wider audience.