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BBC - Breaking Boundaries in K-12 Classrooms

The integration of gender into classroom instruction

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Welcome & Agenda

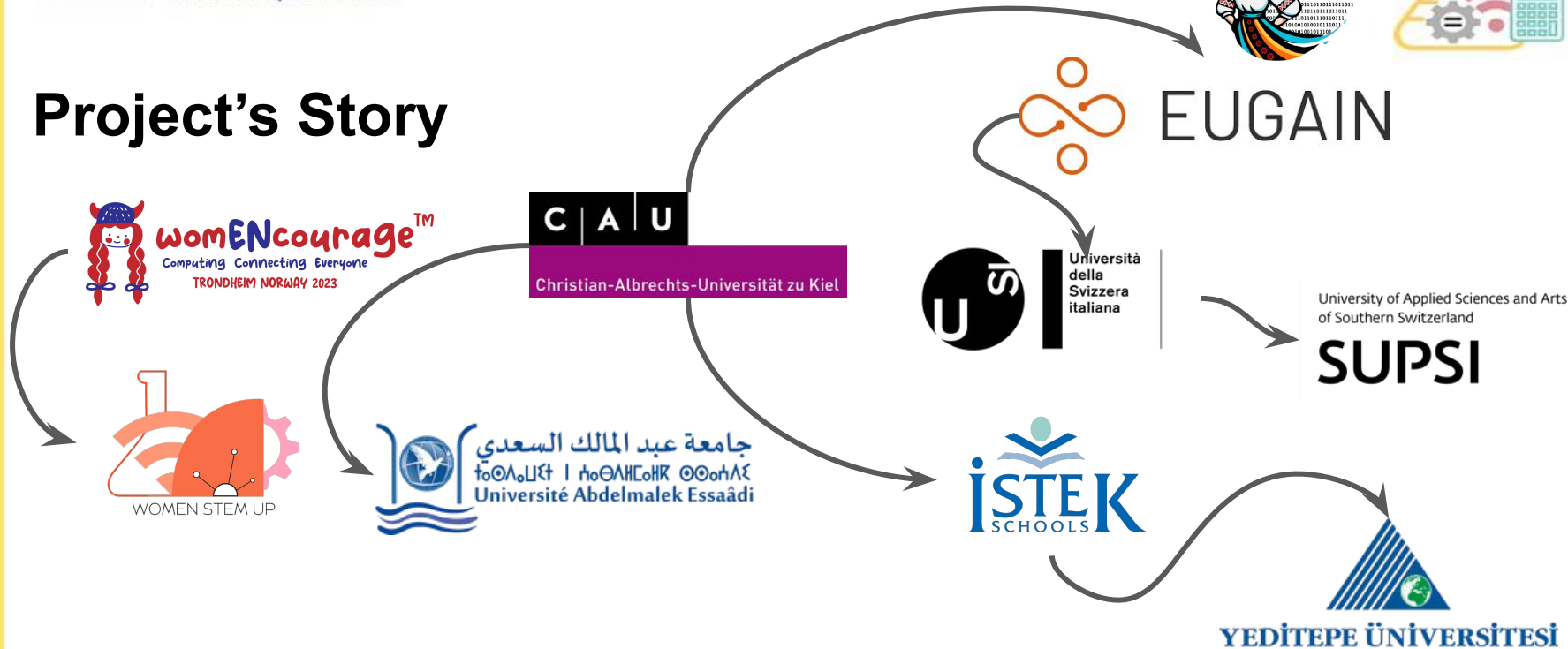
- Welcome remarks
- Project overview
- Key activities & workshops
- Results & lessons learned
- Activity
- Open discussion & networking



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Project's Story





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Project Overview

Generating knowledge on how to
create a gender-inclusive
environment in STEM fields



Identifying examples that can be
utilized to promote inclusivity in
education and teaching practices

Breaking stereotypes, enhancing
efficiency by critically identifying topics
that will help incorporate gender into
education and teaching practices



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Target Groups

K-12

Teachers

**Education
Leaders**

University

**Pre-service
teachers**

Academicians



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Expected Outcomes

Contribute

Contribute to diminish the gender gap in STEM by attracting and keeping more female teachers and students

Create

Create and inclusive learning/teaching environment in the K-12

Support

Support and inspire managers on how to develop policies and work-plans to embed gender in daily teaching



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Integration of Gender: Common Goals





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Maturity Scale

- Developed to provide a structured framework to assess how schools and universities progress in integrating gender equality into teaching and education
- Each level builds on the previous one, moving from no awareness (Level 0) to full promotion and innovation (Level 4), guiding institutions toward sustainable and inclusive practices



Level 0 – No Awareness

- No recognition of the importance of gender and equality issues in teaching and education
- Discussions limited to macro/generic topics (e.g., equal salaries, recruitment of minorities)



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Maturity Scale

Level 1 – Aware

- Awareness that gender is an important issue, but no evidence of implementation in teaching and education
- Mentioned in policies at a general level, without concrete work plans or strategies

Level 2 – Committed

- Proactive acknowledgment of gender issues
- Organization begins developing strategies and practices to integrate gender perspectives
- No dedicated resources or assets allocated yet



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Maturity Scale

Level 3 – Active

- Organization develops indicators to measure progress
- Concrete actions and short-term goals (e.g., a 1-year plan) are identified
- Focus on creating standards and indicators to track and visualize progress

Level 4 – Promoting

- Organization actively supports agility and innovation at both macro and micro levels
- Teachers and school managers are committed to embedding gender-sensitive policies and practices in daily teaching and learning



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<https://www.breakingboundariesstem.eu/>



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Workshop 1: What is the main objective?

Give ideas and share best practices on how to have a gender-friendly environment in the classroom.



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Workshop 1: Who, How, and For How Long?

- **Who?** K-12 Pre-service teachers and teacher trainers.
- **How many?** : 15 participants.
- **How?** Hands-on, in-person sessions.
- **For how long?** 3 intensive hours of collaboration and sharing.



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Workshop 1: How did we achieve this objective?

- Introduce the project and workshop.
- Discuss examples: How to embed gender in STEM areas and daily teaching.
- Invite teachers to reflect about their teaching material and share examples of adaptation.



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Workshop 1: What Did Our Workshop Look Like?

- **Interactive & Participatory:** Built on active discussion and collaboration.
- **Focus Group Dynamics:** Trainers & Pre-service Teachers facing each other to share perspectives.
- **Case-Based Conversations:** Discussed real classroom examples of handling gender issues.
- **Reflection & Exchange:** Encouraged participants to connect experiences and propose adaptations.





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Workshop 1: Teachers' Contributions: How did they embed Gender in STEM Teaching?

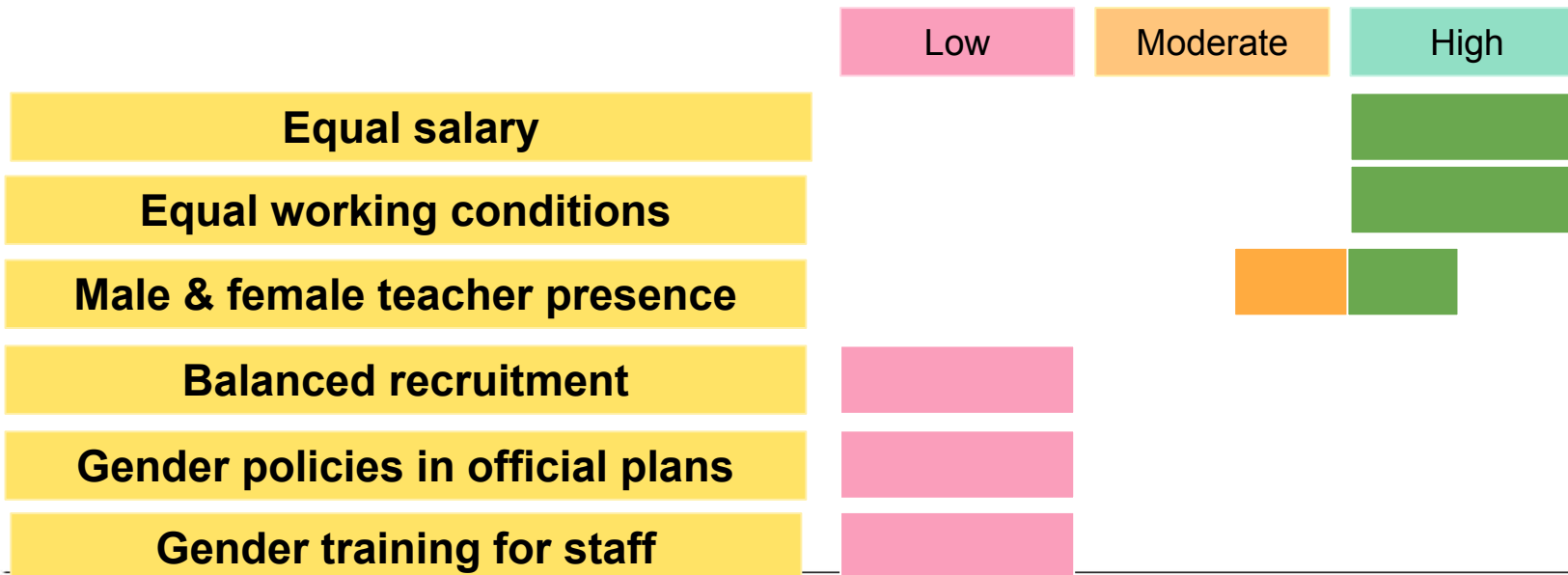
<p>Teacher A (Computer Science and Digital Skills)</p>	<ul style="list-style-type: none"> -Integrates algorithmic bias analysis in AI (recruitment tools), -inclusive coding examples, -and co-creates anti-bias guidelines (repository).
<p>Teacher B (Mathematics)</p>	<ul style="list-style-type: none"> -Uses gender-related real cases in statistics, -inclusive naming (instructions for the problems), -and group discussions to raise awareness.
<p>Teacher C (Chemistry)</p>	<ul style="list-style-type: none"> -Revises history of science by highlighting women scientists, -adapting teaching materials, -and fostering critical discussion.



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Workshop 1: *Results, what is the Institutional Gender Perspective?*





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Workshop 1: What are the key conclusions?

- The students could **also participate** in the inclusion process.
- **Pay attention** to some **details** in the classroom.
- Young girls are **more studious** than young boys.
- **Inclusion, a definition:** « *Educating and assessing students based on their abilities rather than on gender, language, ethnicity, or other external factors.* »
- **Education is the key!**



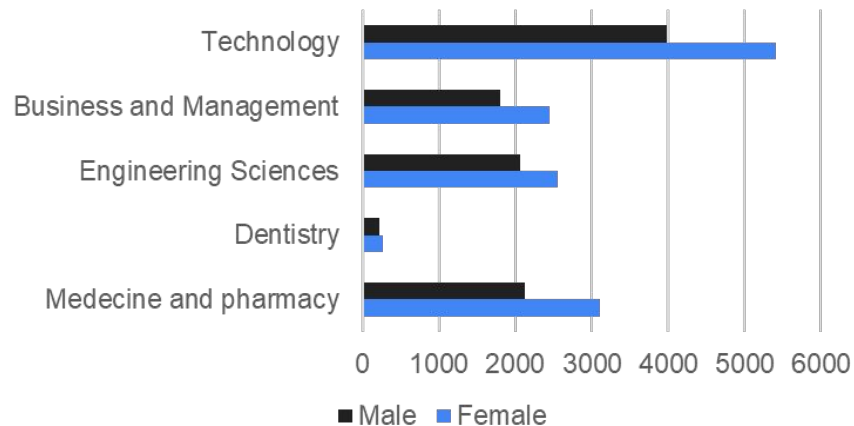
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Workshop 1: What does the actual statistics say?

Official statistics from last year:
newcomers by field of study.

Official statistics 2024: new commers





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Workshop 1: From Practice to Reflection: How Can We Make Inclusion More Explicit?

- INSPIRA.
- « In my classroom, I generally do not observe explicit gender issues, even though the number of female students is a bit higher than that of male students. However, this should not prevent us from raising awareness about gender inequalities. »
- **Objective:** more explicit about inclusion.



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Workshop 2:

Participants: Managers and leaders (at least 2 representatives)

Main aim of the workshop:

- To receive information sampled during the workshops
- To find issues to include in the policies
- To stimulate and facilitate the inclusion of gender in daily teaching and interactivity with students



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Workshop 2:

Process:

- Associating the maturity scale with the outputs of the workshop
- Commenting on educators experiences
- Discussing the steps that can be reached and via what
- Brainstorming on the possibility to develop or improve policies and how goals and aims can be achieved
 - develop of a long term policy or work-plan
 - allocate resources to support teachers that are willing to develop examples, apply the check list
 - support and finance a pilot to show the effects of embedding gender and intersectionality

Main aim of the workshop:

- To receive information sampled during the workshops
- To find issues to include in the policies
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Workshop 2:

Checklists:

- For teachers
- For managers
- Policy and Strategy
- Training and Awareness
- Communication and Participation



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Workshop 2:

Checklists:

- For teachers
- For managers
- Monitoring and Evaluation
- Resources and Support
- Implementation and Sustainability



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Participants

13
Germany

14
Morocco

19
Germany

8
Morocco

15
Turkey

14
Switzerland

23
Turkey

TbD
Switzerland

56 Teachers

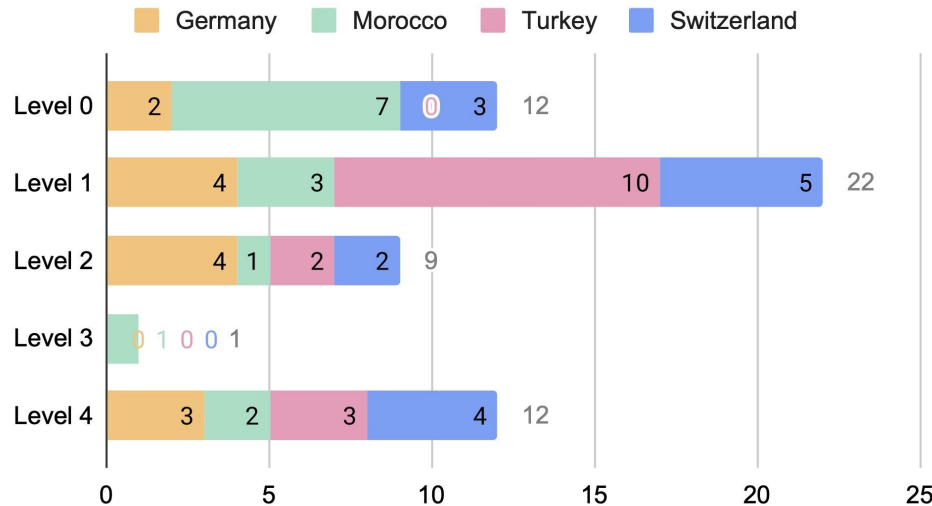
50 Managers and Leaders



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Maturity Level - Teachers



- Between Aware (Level 1) and Committed (Level 2)
- Awareness, mention in policies, initial development of strategies to integrate gender perspectives, no dedicated resources

Germany 1.85

Morocco 1.14

Turkey 1.73

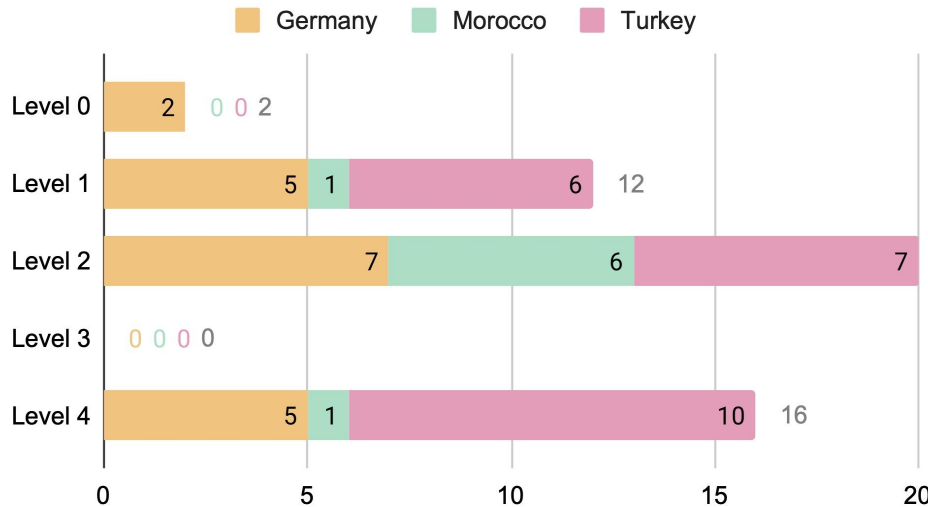
Switzerland 1.79



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Maturity Level - Managers and Leaders



- Between Committed (Level 2) and Active (Level 3)
- Proactive acknowledgement of gender issues, development of strategies and indicators, concrete actions and short term goals

Germany 2.05
Morocco 2.13
Turkey 2.61
Switzerland –



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The organization I work with has guidelines, checklist and platforms to follow up and evaluate work

	Teachers	Managers
Germany	Don't know	Don't know
Morocco	Majority "no"	Majority "no"
Turkey	Majority "no"	Majority "no"
Switzerland	Majority "no"	–



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The organization I work with give support and incentives for teachers to perform role of agent of change

	Teachers	Managers
Germany	Don't know	Don't know
Morocco	Don't know	Majority "yes"
Turkey	Don't know	Majority "yes"
Switzerland	Don't know	–



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The organization I work with has advertisement sharing plans to issue gender balance

	Teachers	Managers
Germany	Both “yes” and “no”	Majority “yes”
Morocco	Majority “no”	Majority “yes”
Turkey	Majority “no”	Majority “yes”
Switzerland	Majority “no”	–



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Dissemination

Dissemination Seminar - 26-27 August 2025 - Kiel, Germany

Alicia Takaoka, Erasmus University, Netherlands “*Community Inclusion in STEAM Project Development: Best Practices and Lessons Learned*”

- the role of digital humanities and cultural memory in fostering inclusive learning environments,
- showcasing community-driven projects from Hawai'i and beyond.
- Drawing on design science and participatory methods,
- practical strategies for engaging students and communities in meaningful STEAM learning,
- the process of collaboration and reflection is as valuable as the final product.





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Dissemination

Dissemination Seminar - 26-27 August 2025 - Kiel, Germany

Tina Vrieler, Uppsala University, Sweden “Advancing Social Justice in the STEM Classroom.

- emphasized that inclusive STEM education is not only a matter of access but also of equity, participation, and empowerment
- the historical development of inclusive education and introduced frameworks for addressing barriers, sharing power with students, and fostering supportive, culturally responsive learning environments.
- showed how STEM education can become a driver of democracy, innovation, and societal change





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Dissemination

Dissemination Seminar - 26-27 August 2025 - Kiel, Germany

Dr. Hatice T. Bora, Başkent University, Türkiye “Teachers as Changemakers: Leading the Way in Gender-Inclusive STEM”

- argued, are crucial agents of change who can foster belonging, fairness, and inclusivity through their attitudes, language, and practices.
- schools can transform their cultures to become more inclusive and equitable learning environments
 - By building professional learning communities,
 - raising awareness of gender equality,
 - and strengthening teacher self-efficacy,





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Dissemination

ERCIM News Submission

ERCIM, the European Research Consortium for Informatics and Mathematics

- Special Issue: Inclusive Digital Futures: Intersectionality, Accessibility, and Responsible Innovation

Project Goal

Workshops

Activities

Impact & Sustainability

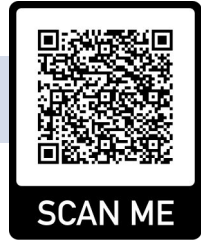


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Dissemination

UNESCO



Colleague : award-winning **For Women in Science (FWIS)** from the **L'Oréal-UNESCO foundation**.

The UNESCO community was kind enough to help us share our project and to pass on our **inclusion** message (as it is one of the core values UNESCO's) and **break boundaries in more classrooms**.



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Activity for Participants

Based on the maturity scale we have developed, you can describe at which level you believe your organization currently stands.



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Questions

What questions do you find most important
to work on in your organization?



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Questions

What level do you think is realistic to achieve?



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Questions

What challenges are there to achieve
progression?



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Questions

Which issues do you want to add to the maturity scale ?



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Questions

Are you surprised by the results we
have obtained in this project?
(teachers vs leaders)



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