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# Guidance for mentors of international trainee physics teachers

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# Case studies of current trainee teachers

## Frederick Acquah

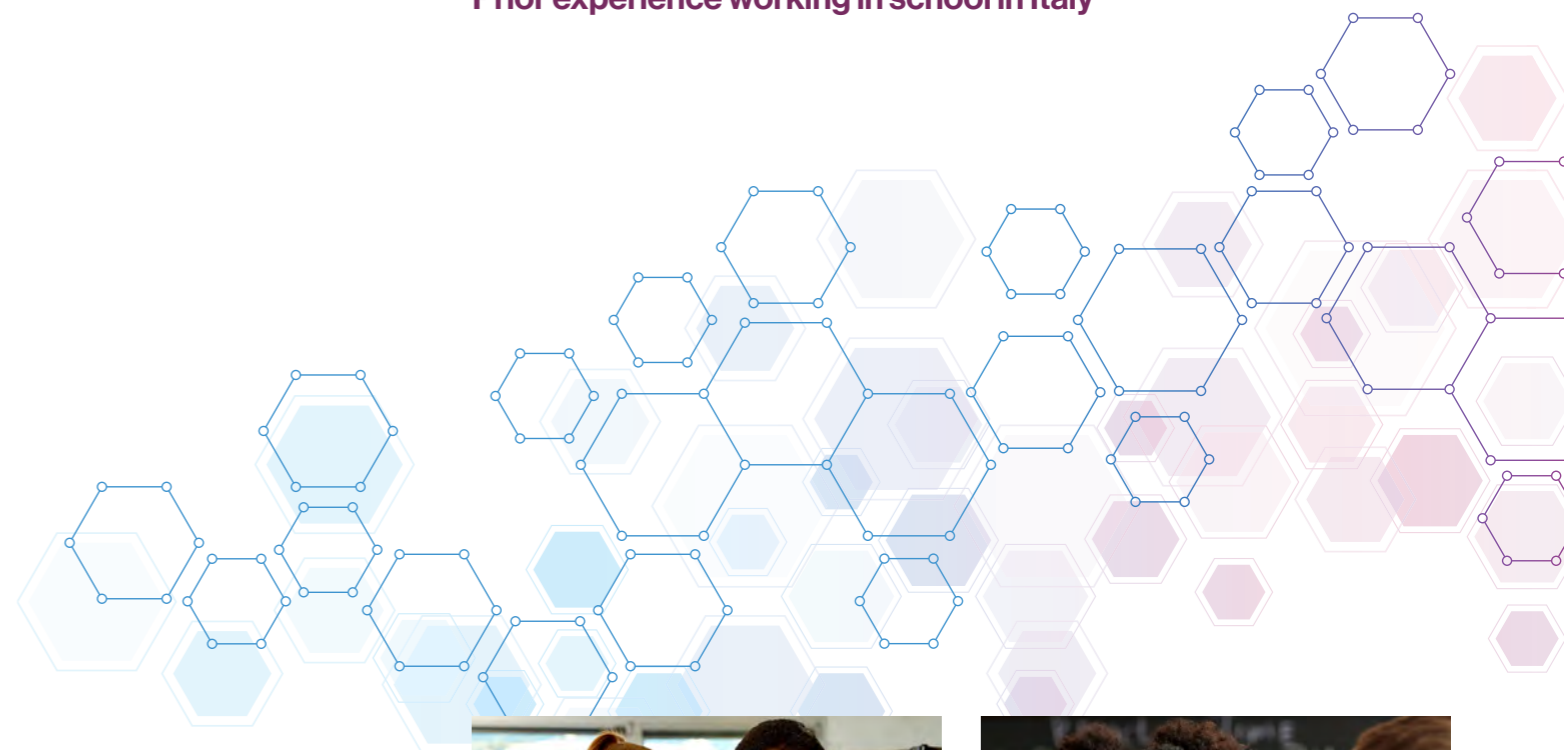
Prior experience working in Government schools in Ghana

## Sarah Opoku

Prior Experience working in international schools in Ghana

## Paolo Casella

IOP Scholar  
Prior experience working in school in Italy



## Introduction

Mentoring trainee teachers is a rewarding and vital role to build the next generation of teachers. Mentors are experienced teachers who work in collaboration with training institutions to hone trainee teachers' pedagogical skill through modelling coaching and providing expert feedback.

Many international trainee physics teachers have prior experience of working in the classroom in their home countries. Mentoring international trainee physics teachers can be particularly rewarding as you support trainee teachers develop their pedagogical craft to a new educational context. Many of the skills of a mentor such as empathy, humour and coaching will be equally relevant when supporting international trainee physics teachers. This guidance aims to support mentors in fostering trainee teachers achievement and career progression.



# Frederick Acquah



## What was your school experience in your home country?

I supported physics lessons in a Senior High School in Ghana from November 2009 to August 2024. Over the years, I prepared students for the West African Senior School Certificate Examination (WASSCE) multiple times.

## What type of school did you work in? What curriculum did you follow?

The school I worked in was a Government Senior High School, following the Ghanaian Senior High School curriculum, which culminates in the WASSCE. The focus was on both theoretical and practical aspects of science, particularly physics, and ensuring students were well-prepared for the examination.

## Why did you come to complete teacher training in England?

Although I have extensive experience in the Ghanaian classroom setting, I came to England for teacher training to gain experience in the UK education system. Teaching in England involves different pedagogical approaches, curriculum requirements, and assessment methods. I believe completing a PGCE with Qualified Teacher Status (QTS) will equip me with the skills

needed to effectively transition to teaching in the UK and other parts of the world since it is internationally recognised.

## What have you found surprising in your time in England thus far?

One surprising aspect has been the genuine emphasis on student well-being and personalized learning. Differentiation, safeguarding, and inclusivity are not just theoretical concepts but are actively practiced in schools and in the classroom. Teachers know their pupils individually, not just as a class, and are aware of each student's unique learning abilities and needs. They tailor lessons, accordingly, ensuring all students have access to the content and can succeed. Inclusivity is evident in how students from various backgrounds are integrated into the learning environment.

## What are the similarities between the curriculum in your home country and in England?

In both Ghana and England, there is a strong emphasis on preparing students for standardized exams. Physics teaching in both systems covers similar foundational topics such as mechanics, electricity, and thermodynamics. The importance of practical work and lab experiments is also a shared feature.

## What are some of the differences?

One major difference is the curriculum structure and teaching methods. In England, there is a strong emphasis on critical thinking, problem-solving, and student-centered learning. The structured assessments through GCSE provide a clear progression, quite different from the WASSCE system in Ghana.

There is also lots of support in learning as the teachers know their students individually and not as a class. Teachers know all about the individual abilities and inabilities of their students and so they effectively cater for the needs of their students throughout the lesson.

## Where are you hoping to teach after your PGCE?

After completing my PGCE, I hope to teach physics (science) at a secondary school in the UK, preferably in London or other parts of England, to continue building on the knowledge and experience I have gained. My goal is to support students in achieving their full potential.

# Sarah Opoku



## What was your school/classroom experience in your home country? What curriculum did the children study?

I supported physics lessons for three years in a private school in Ghana where we used the British curriculum. I worked with the IGCSE and A-Level classes following the Cambridge Assessment International Education (CAIE).

In my time in school, I gained experience of laboratory sessions, and conducting practical demonstrations. These hands-on practical experiences supported students to grasp challenging concepts in physics. I mentored female students aspiring to pursue careers in engineering, something I am particularly passionate about.

## Why did you come to complete teacher training in England?

I chose to pursue my teacher training in England because I wanted to gain international teaching experience and explore novel approaches in education. Having been exposed to the British curriculum in Ghana, I know that the opportunity to train in England

would give me the skills to refine my teaching and be exposed to innovative methods and strategies in teaching.

## What have you found surprising in your time in England thus far?

What I have found surprising in England so far is the strong emphasis on behaviour management and classroom discipline, which is more formal and structured. There is a strong focus on not just academic performance but also the emotional well-being of students, which is quite different from my experiences in Ghana.

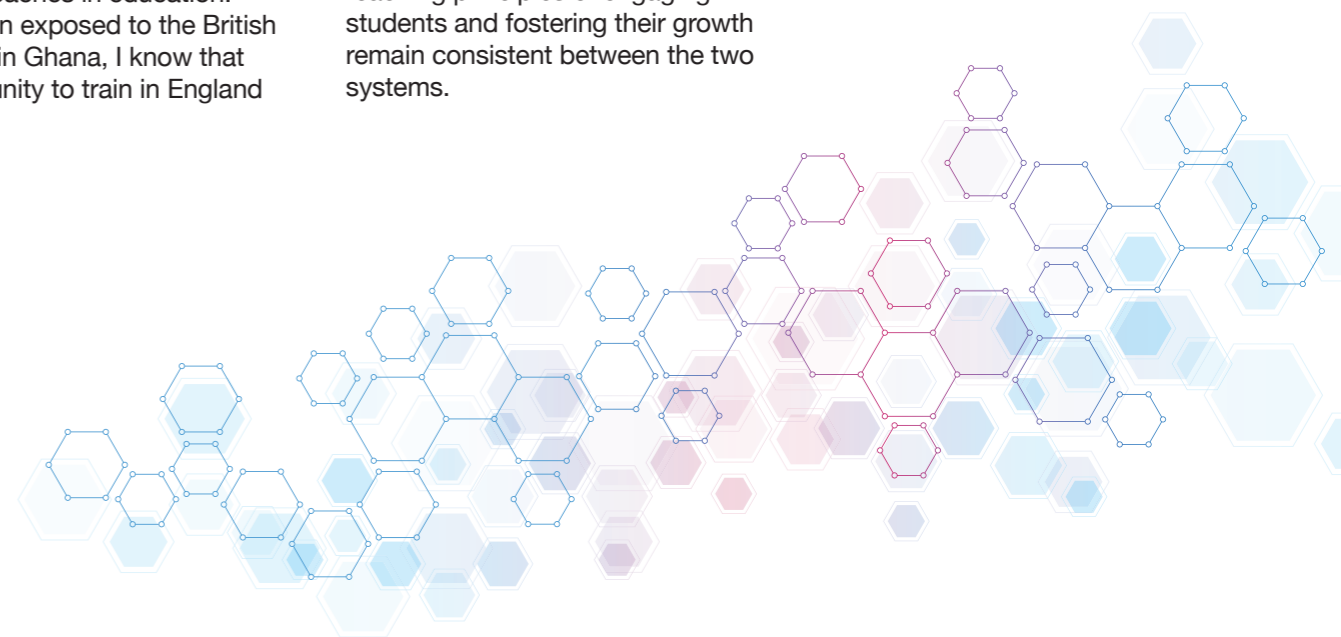
## What are the similarities and differences between the curriculum in your home country and in England?

In terms of similarities, both Ghana and England have a strong focus on high academic standards and student achievement, particularly in subjects like physics. The core teaching principles of engaging students and fostering their growth remain consistent between the two systems.

However, the key differences I have noticed include the higher level of classroom management strategies in England and the way assessments are carried out, which is more continuous and data-driven compared to Ghana. The resources and support available to teachers in England are also much more extensive, providing more opportunities for tailored learning.

## Where are you hoping to teach after your PGCE?

After completing my PGCE, I hope to teach physics in UK. The skills and experience gained from this training will enable me to have an even greater impact in teaching wherever I find myself.



# Paolo Casella

IOP scholar 2024/25



## What was your school/classroom experience in your home country?

For two years I worked in a maintained public school that encapsulates the UK key stages 4 and 5. I used to support students in their mathematics and physics lessons. I have tutored KS4 and KS5 students in mathematics and physics as well as engineering and medical sciences undergraduate students.

## What curriculum did the children study?

In school was a licio scientifico and the children followed a curriculum devised by the Ministry of Education. In Italy, the children had exposure to a wide range of subjects, and I enjoyed learning how to teach an interdisciplinary way.

## Why did you come to complete teacher training in England?

I was very curious to explore a different school system. Studying to become a teacher in England continues to be a very enriching experience, and it will allow me to take what I think is best from the UK system and integrate it into my current teaching style.

## What have you found surprising in your time in England thus far?

I have been pleasantly surprised by the pastoral system that is commonplace in English schools. In Italy there is not anything like form tutors, heads of year or heads of departments. There are only the headteacher and one deputy headteacher, which is the one who interacts the most with teachers.

## What are the similarities between the curriculum in your home country and in England?

The scientific subject curriculum is pretty much the same, but children in England seem to study a narrower range of subjects and there is less emphasis on the humanistic tradition than in Italy.

## What are some of the differences?

There are many differences, and I am really enjoying letting them surprise me.

First, classes in Italy have fixed classrooms and teachers move between them (we in fact translate class and classroom with the same word).

I enjoy science classrooms being equipped as laboratories, as it allows quick practicals and demonstrations to be performed during the lessons without too much commitment. Also, the technicians' support in the UK is great.



# Mahendra Desai

Current ECT year 1 IOP scholar from 2023/24. Prior teaching experience in India

## Supporting ECTs

Many mentors will also offer support to early career teachers (ECTs). The redeveloped Initial Teacher Training Early Career Framework (ITTECF) (DfE 2024) provides a scaffold for mentoring of ECTs development with particular emphasis on pedagogical skills. ECTs craft and reflective practice will be shaped by ITTECF guidance. Current strengths as well as areas for further development are identified and acted upon. To support ECTs to become expert practitioners, it can be helpful to identify areas of strength and structure targeted guidance in areas of the ITTECF that may need further development. In the case study that follows, a former IOP scholar and current ECT physics teacher discusses his journey to become an expert practitioner in physics.



### Why did you come to complete teacher training in England?

I came to complete the teacher training in England because of the quality and the process of teacher training provided in England. The teacher training here is research based and infused with the collaborative work of theory and varying placements in the schools. I wanted to go through the rigorous process and shape myself with lot of understanding and practical knowledge as-a teacher.

### What are the similarities between teaching in your home country and in England?

- **Curriculum structure:** Both countries have a national curriculum framework that provides guidelines for what should be taught at distinct levels.
- **Exam-orientated systems:** Both education systems place significant emphasis on standardised testing and exams, particularly at the secondary level.
- **English as a medium of instruction:** English is widely used as a language of instruction in both countries, especially in higher education and many private schools.
- **Teacher training:** Both countries require formal qualifications for teachers, typically including a bachelor's degree and specific teacher training.

### What are some of the differences?

- Classrooms in India tend to have larger class sizes compared to England, often with 40-50 students per class, while English classes typically have 20-30 students.
- England emphasises more interactive and student-centred learning approaches, while home country classrooms often lean towards teacher-centred, lecture-based methods.

### You have now achieved QTS. How did your training schools and training institution help you become a better physics teacher?

As a newly qualified physics teacher who has just achieved Qualified Teacher Status (QTS), I find myself reflecting on the invaluable experience gained through my training. The comprehensive programme, combining educational theory with diverse school placements, has significantly shaped my approach to teaching and prepared me for the challenges of the classroom.

Critically engaging with current research was instrumental in building my understanding of various pedagogical approaches by providing a solid theoretical foundation, that is specifically tailored for science education. I learnt about inquiry-based

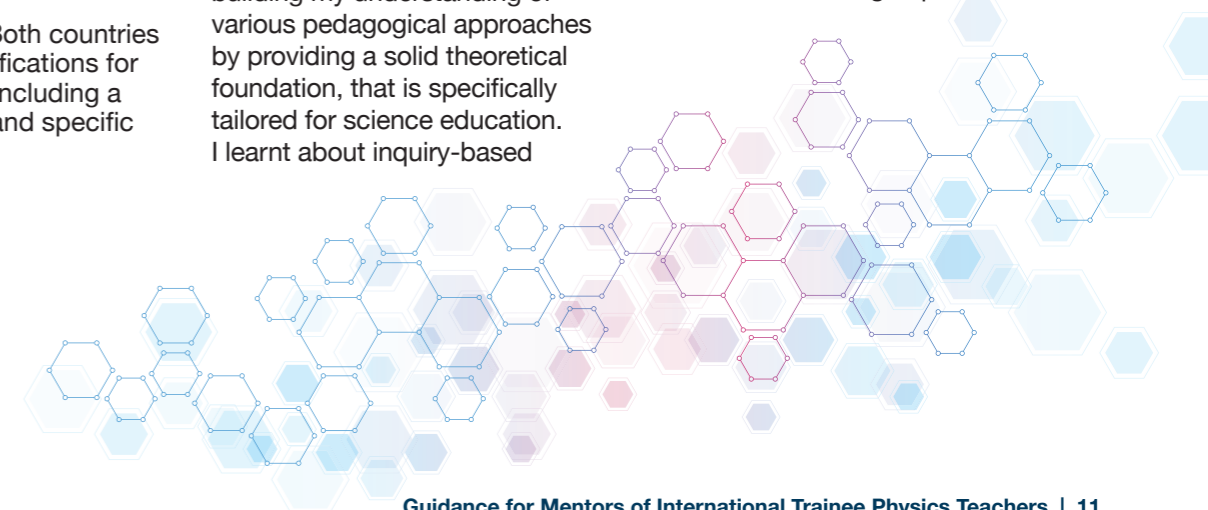
learning, which I have found particularly effective in engaging students with physics concepts.

The mentorship I received was pivotal to my development as a teacher. Fellow teachers encouraged reflective practice, pushing me to constantly evaluate and improve my teaching methods. Through my training, I have developed a toolkit of strategies for effective physics teaching that I can further refine during my ECT years and beyond.

### What advice would you give to someone considering studying a teacher education course in England?

If you are considering studying a teacher education course in England, here is some advice to help you make an informed decision and prepare for your journey:

- Research different routes into teaching.
- Choose your subject and age range carefully.
- Prepare for the application process.
- Understand the financial aspects.
- Prepare for the workload – be prepared for the challenging and rewarding experience.



# Methods to support your international physics trainee

Mentorship provides targeted support to individual home and international students, for optimal training. Every trainee is an individual and it is important mentors adapt the support they provide to meet the emergent needs of their trainees. Many of the strategies mentors utilise are equally applicable to home and international trainee teachers. Key strategies employed when mentoring physics trainee teachers are outlined below.

## 1. Supporting subject knowledge and sequencing the curriculum

International physics trainee teachers frequently have strong subject knowledge in physics but may be less familiar with the structure of the English national curriculum. It can be helpful to:

- **Discuss with your trainee the order in which subject knowledge is sequenced**  
For example, in the key stage 2 topic of electricity, children learn the relationship between the number of cells in a simple circuit, the voltage and the resultant brightness of a bulb. As we begin Secondary school, new language such as potential difference is introduced. It is important to support trainee physics teachers understand how to bridge between content covered in primary and secondary school.
- **Support your trainee refine their subject knowledge in all three sciences**  
In England, trainee teachers are expected to teach Biology and Chemistry as well as Physics to GCSE standard. While this requirement may not accord with International students' previous experiences, help can be provided by development of subject knowledge. It may be worth considering:
  - ▶ giving your trainee access to revision resources you use to develop subject knowledge in the students you teach.
  - ▶ guiding trainee teachers to specific websites and support provided by organisations such as the Institute of Physics, STEM Learning, The Royal Society of Chemistry and the Association for Science Education.

## 2. Adopt a coaching style to mentoring.

Trainee teachers who have been educated or taught outside of the UK may have a different experience of science education than we have in the UK. International trainees may refer to lessons as "lectures" with limited experience of including practical work within their lessons.

### To help your trainee you could:

- Work collaboratively with your trainee to co-plan a lesson.
- Guide your trainee how to identify the knowledge and working scientifically skills that can be included in the lesson.
- Adopt a coaching style asking questions such as:
  - ▶ Tell me you would go about teaching this topic?
  - ▶ How will you identify, and support students who find the topic challenging?
  - ▶ What specific activities will you include in your lesson?

## 3. Adapting to a new cultural and educational context.

International students must adapt to UK society as well as the educational framework. In addition to provision of a robust foundation for science competency, strategies that link student motivation to educational achievement are encouraged.

### You can help by:

- Providing specific examples of how you enthuse and motivate your students to learn. In your mentor meetings with the trainee discuss prompt questions such as
  - ▶ How would expect to start a lesson in school?
  - ▶ Why do you think pupils attend school?
  - ▶ Co-observe an expert practitioner and meet to discuss the lesson observation notes and strategies used by expert practitioners.

Education is more international and cross-cultural than ever before. Training of the next generation of science teachers will benefit by integration of cultural diversity, and ethical perspectives with educational experience.

### You can help by:

- Providing clear and concise guidance on expectations with dress code.
- Providing explicit guidance on how trainee teachers can maximise their time in school. This might include things like expectations of school meetings, lesson observations or working with school technicians or support staff.
- Directing your mentee to observe strategies for behaviour management adopted by expert colleagues.
- Modelling how to use a school behaviour policy in your teaching.



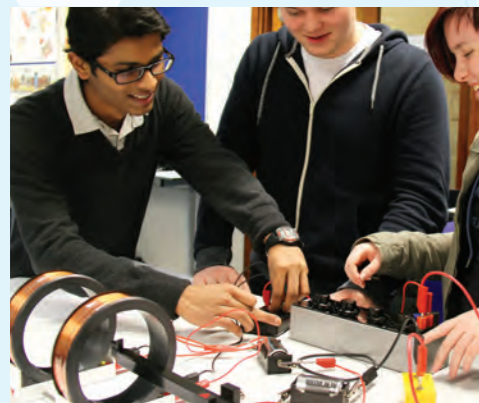
## Conclusion

Mentorships organised between faculty, schools and trainees will use pedagogical best practices to enhance the science education experience. A trusting, supportive relationship built upon respect for cultural and motivational differences, will augment student wellbeing during training and ultimate career satisfaction.

## References

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