

WISSENSCHAFTLER SIND  
AUCH NUR MENSCHEN



Project Report — March 2019



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## Executive Summary

The project “Wissenschaftler sind auch nur Menschen”, translated to English as “Scientists are human too”, was developed and delivered in 2018/2019 by Native Scientist in partnership with the Goethe-Institut London.

**Six booklets** were created as a resource to promote the integrated learning of language and science among students attending classes of German as a foreign language across multiple schools in Europe. Each booklet was a biographical account of a German scientist living and working abroad and challenged the students to carry out a scientific experiment.

In this project, the **teachers of German paired up with science teachers** from the same school and explored the story of a scientist linguistically and scientifically. Later on, students presented and discussed their results with the real scientist, learning more about the specific scientific field and the life and career of a scientist.

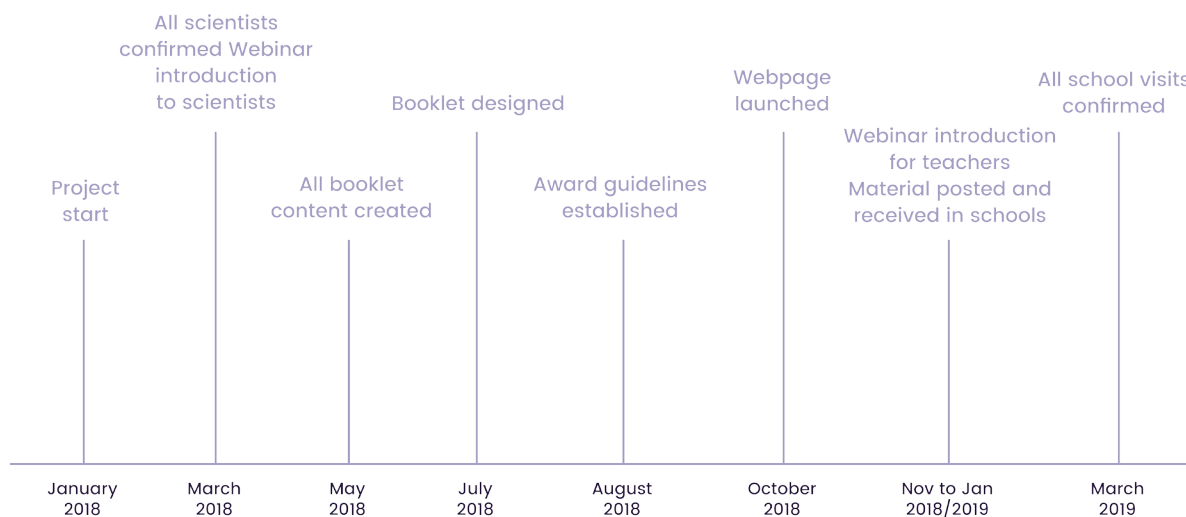
A total of **202 students** aged 13-19 years old participated in the project and reported a positive impact and a better understanding of the value of science and the career of a scientist. As one teacher said, this was a **“great project to involve the students in modern up to date science and to open their eyes to studying abroad”**, highlighting its innovative, dynamic and empowering nature.

## Project Objectives and Overview

The project focused on the following main objectives:

1. to promote the learning of German in adolescents;
2. to raise awareness about the benefits of multilingualism (speaking more than one language is a valuable skill at a personal and professional level);
3. to promote science learning and careers among adolescents;
4. to break stereotypes about scientists (not all scientists are mad-haired man);
5. to enable the interaction of adolescents with real-world scientists;
6. to create in all participants a positive and exciting memory in German.

The key moments of this project are depicted below:



The project's website is available here: [www.nativescientist.com/scientistsarehumantoo](http://www.nativescientist.com/scientistsarehumantoo)

Six booklets were produced and studied in eight schools in seven different European countries. Each booklet tells the story of a German scientist living and working abroad and challenges students to carry out a scientific experiment:

Book Title	Experiment	Schools
Ingo Mueller-Wordarg – Ein Physiker, der Planeten erforscht	Wie erforschen Wissenschaftler die Atmosphäre eines anderen Planeten?	Tomlinscote School & Sixth Form College, Frimley (England) Farlingaye High School, Woodbridge (England)
Stephanie Zihms – Eine Geologin, die neues Wissen aus alten Gesteinen gewinnt	Wie verformen sich Gesteine?	Bishopbriggs Academy, Bishopbriggs (Scotland)
Matthias Kremer – Ein Ingenieur, der Batterien druckt	Wie werden elektronische Schaltungen mit Hilfe von Nanopartikeln gedruckt?	Coláistí Eoin and Íosagáin, Dublin (Ireland) Borgarholtsskoli, Reykjavik (Iceland)
Viola Nähse – Eine Wissenschaftlerin, die von der Zellbiologie fasziniert ist	Wie sehen verschiedene Zellen unter zwei unterschiedlichen Mikroskopen aus?	Bodø Videregående Skole, Bodø (Norway)
Henning Kirschenmann – Ein Physiker, der nach den kleinsten Bausteinen der Materie sucht	Magnetfeld + geladene Teilchen = ?	Gymnasiale Oberstufe Sammon, Tampere (Finland)
Katja Spiess – Eine Juniorprofessorin, die Medikamente gegen Viren entwickelt	Wie viele Mikroorganismen umgeben uns?	Middelfart Gymnasium &Hf-Kursus, Middelfart (Denmark)

## Results

To evaluate the impact of this project, participants' perceptions were captured through questionnaires administered to students before and after the project was completed, and to teachers and scientists after the project was completed.

### Pupils learned and had fun

"It was fun and we should do something like this again" wrote one of the students in the questionnaire administered after the project had been completed. Another one added "It was extremely interesting and very enjoyable." 202 pupils aged between 13 and 19 years old took part in the project. The level of German ranged from A1 to C2, peaking at A2. Based on those 121 pupils who provided feedback, below is the percentage of students that reacted positively to the project.

Statement	% pupils who agreed	% pupils who disagreed	% pupils who didn't know
"The booklet was cool."	73%	21%	6%
"The story was interesting."	70%	26%	4%
"The experiment was fun."	78%	12%	10%
"The meeting with the scientist was exciting."	77%	15%	8%
"I learned new words in German."	79%	14%	7%
"I learned more about science."	67%	23%	10%
"I learned a lot about careers in science."	79%	14%	7%

## Teachers valued the experience

“Great project to involve the students in modern up to date science and to open their eyes to studying abroad.” wrote one of the science teachers after the project. Another one said, “It has been a magnificent project and I am thrilled to have been part of it!” One hundred percent of the teachers rated the experience “very good” (83%) or “good” (17%) and said “yes” when asked if they recommend activities organised by the Goethe-Institut and Native Scientist to their colleagues.

The booklet, which included a story of a scientist and an experiment, was well received in schools. Six out of seven teachers of German said that the level of German in the booklet was of the right level and five out of five teachers of science also said that the level of science was of the right level.

Importantly, teachers agreed with the following:

Statement	% teachers who agreed	% teachers who disagreed	% teachers who didn't know
“The project was relevant for students' academic life.”	100%	0%	0%
“The project enabled language learning.”	100%	0%	0%
“The project enabled science learning.”	100%	0%	0%
“The project was an effective way to present role models to students.”	100%	0%	0%
“The project inspired some of our students to pursue a science-related career.”	100%	0%	0%
“The project filled a gap in the school's programme.”	75%	17%	8%
“Based on this experience, science and language integrated teaching is an effective pedagogical method.”	100%	0%	0%

Furthermore, the teachers' webinar induction delivered by Native Scientist to provide helpful information, tips and clarify questions was appreciated by all teachers. The visit of the scientists to each school was also a very good experience, as acknowledged in this comment from a teacher of German: "The scientist was amazing. The experiment has become part of the regular science lesson. It has spread, which I think is great."

### Scientists had a fulfilling experience

"This was a rewarding experience" and "Projects like this are very important to help young people to understand science more effectively" were some of the comments we received from scientist. All of the scientists rated the experience "very good" and five out of six would repeat the experience (one wouldn't repeat the experience due to other commitments and time limitations). Overall, the project covered the fields of biology, physics, technology and geology.

Below is a summary of the scientists' perceptions:

Statement	% scientists who agreed	% scientists who disagreed	% scientists who didn't know
"The meeting with the students was fun."	100%	0%	0%
"I talked in German as much as possible."	100%	0%	0%
"Students were very interested in me as a person and scientist."	83%	0%	17%
"Students asked a lot of questions about the topic."	100%	0%	0%
"Support from the organisers was good."	100%	0%	0%
"Organisation of the school visit was good."	100%	0%	0%
"Webinar (March 2018) about the project was good."	67%	0%	33%
"Webinar (Nov 2018 – Jan 2019) with the teachers was good."	83%	0%	17%
"The idea of the Science Communication Excellence Award was good."	67%	0%	33%



## Satellite actions

The execution of this project has inspired teachers and scientists to share their experience using multiple media means, including photos, videos, news articles, social media posts and talks. A list with some examples is presented below.

Where	What	Link
Bodø Videregående Skole, Bodø, Norway	News article in school magazine	See <a href="#">here</a>
Coláistí Eoin and Íosagáin, Dublin, Ireland	News article for social media	See <a href="#">here</a>
Tomlinscote School, Frimley, England	Video about the project created by teacher Gillian Fernandez	See <a href="#">here</a>
Borgarholtsskoli, Reykjavik, Iceland	News article in school magazine	See <a href="#">here</a>
Bishopbriggs Academy, Bishopbriggs, Scotland	Stephanie Zihms shares her experience of the project at a German meeting organised by the German Church Scotland & Goethe Institut Glasgow  Photos of the project	See <a href="#">here</a>  See <a href="#">here</a>

## Conclusions

At the beginning of the project, Native Scientist invited six German scientists from different countries in Europe to write a story about their career and themselves as a human being. In addition, they developed a step-by-step protocol of an experiment that could be carried out by adolescents' students in partnership with their German and science teachers.

The booklets were created, printed and sent to schools together with some of the materials needed to carry out the experiments. After conducting the experiments, students were able to share their results and ask questions to the author of the booklet, creating a positive and exciting memory in German.

The biggest challenge of this project was to cater for the different levels of German and Science of the pupils, as some pupils had low levels of German proficiency while others had low levels of Science proficiency. A good awareness of these aspects and the establishment of effective communication channels with everyone involved are vital to maximise impact, manage everyone's expectations and tailor our efforts.

Overall, the pupils, teachers and scientists had a fun and fulfilling experience and showed interest in more projects with Native Scientist.

## Acknowledgments

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