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SURVEY ASSESSING KNOWLEDGE, SKILLS, INTERESTS AND ATTITUDES OF SECONDARY
EDUCATION STUDENTS AND TEACHERS, RELATED TO THE THEMES OF THE PROJECT

REPORT OF FINDINGS – ITALY

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Table of contents

Introduction	3
Context	3
The national secondary education system architecture	3
School subjects included in the official programme	4
Level of STEAM integration in formal secondary education	5
The Environmental Technical High School Elsa Morante – Conti Ginori and Scientific Lyceum Niccolò Copernico in Prato	5
Survey methodology	7
Analysis of findings	9
Students' survey	9
Teachers' survey	23
Conclusion	37
Students' peculiar results	38
Teachers' peculiar results	39



Introduction

This survey is the initial work-phase of the Erasmus+ project GOODFOOD which aims to foster integrated STEAM (Science, Technology, Engineering, Arts and Math) subjects in learning in secondary schools in relation to food knowledge. Knowing about food is a highly challenging matter, due to the wide spectrum of topics that are connected to food: from its production stage to the consumption and disposal of food waste. However, it is increasingly important to know about it and getting aware about the environmental issues that are connected to food and how human choices can affect not only the environment but also our health.

Then, the interesting part is also related to the cultural aspect. As we all know, different countries have different recipes and traditions that can be triggers of multicultural knowledge and social interactions. Food habits change along the generation changes and among cultures. Therefore, GOODFOOD aims also to stimulate the awareness of diversity between generations and personal habits, besides understanding the impacts of these on the environment and health.

The survey aims at identifying teachers' and students' basis knowledge and skills on the main topics of the project, either in terms of content (e.g., food and related issues) either in terms of learning methodologies and Information and Communication technologies (ICT, that will be used during the project).

Context

The national secondary education system architecture

The Italian education and training system is based on the principles of subsidiarity and the autonomy of educational institutions. The State has exclusive legislative competence for the "general rules on education" and for the determination of the essential levels of services that must be guaranteed throughout the national territory (<https://www.miur.gov.it/sistema-educativo-di-istruzione-e-formazione>). Indeed, the public educational institutions have autonomy in didactic, organization, research, experimentation, and development although respecting the principles defined by the State.

The education system is organized as follows:

- Not mandatory education (From 0 to 6 year-old pupils);
- First compulsory education cycle, lasting a total of 8 years, is divided into
 - five-year primary school (pupils' age from 6 to 11);
 - first grade secondary school, lasting three years (pupils' aged from 11 to 14);
- Second cycle of education divided into two types of pathways:
 - Second grade secondary school, lasting five years, for students who have successfully completed the first cycle of education and can attend high schools, technical institutes or vocational institutes (students' age from 14 to 19);
 - 3-year and 4-year courses of vocational education and training (IeFP) under the regional competence, for students who have successfully completed the first cycle of education.



- Higher education offered by Universities and other Higher Education institutions in Art, Music and Dance (AFAM) and Higher Technical Institutes (ITS) with different types of pathways:
 - tertiary education courses offered by universities
 - tertiary education courses offered by AFAM institutions (Higher Artistic, Music and Dance Training)
 - professionalizing tertiary training courses offered by ITS (Higher Technical Institutes)

Among the high schools, Lyceums aim at obtaining an upper secondary education diploma. High school courses of Lyceum provide the student with the cultural and methodological tools for an in-depth understanding of reality, so that he can face situations, phenomena and problems with a rational, creative, planning and critical attitude, and acquire knowledge, skills and competences consistent with personal abilities and choices and adequate for the continuation of higher-level studies, inclusion in social life and in the world of work.

High school courses last five years. They are developed in two biennial periods and in a fifth year which completes the disciplinary path. The courses realize the educational, cultural and professional profile of the student at the end of the second cycle of the educational system of education and training for the high school system.

The technical institutes offer a limited number of broad courses, linked to sectors that are fundamental for the economic and productive development of the country.

From 2018/19 school year, professional institutes also offer eleven study courses, a new organizational and teaching model, and enhancement of laboratory activities. They train students in arts, crafts and professions that are strategic for the country's economy.

School subjects included in the official programme

In general, all high schools include common subjects, for instance humanities such as Italian (literature), scientific subjects such as mathematics, physics, science and technology and foreign languages such as English.

Then, any specific High school or institute includes subjects that define the nature of the school main address or focus. For instance, the Scientific Lyceum is a course of study that combines the humanities such as Italian language and literature, Latin, history of art, a foreign language, history, philosophy, geography, gymnastics and religion with those of a scientific nature such as mathematics, physics, natural sciences (such as biology and chemistry) and technology. Those who choose this school can also decide to enroll in the Applied Sciences option, which also offers practical workshops and instead of Latin, students will study computer science and will run practical laboratories.

There are different types of courses: traditional scientific high school, the one with the "Applied sciences" option and the scientific high school with sports address.

The students graduated at the scientific lyceum will have both a humanistic and a scientific background. They know the history of human thought, the relationships between daily life and science, they know how to use calculation tools well, they are aware of the developments



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of technology in the scientific field, and they know the contents of the physical and natural sciences. This school provides a background suitable for all types of university courses.

The technical institutes represent a various range of fields of study that provide students with the technical background and high probability of occupation in the labor market after the graduation. There are different types of technical institutes depending on the aimed professional background, thus with a prevalence of related subjects e.g., agriculture and agroindustry, marketing and finances, chemistry-materials and biotechnologies, constructions-environment and territory.

Besides the subjects inherent each type of school, transversal subjects are also taught. Since 2020, "Civic Education", as a path to train responsible citizenship, has become a mandatory transversal discipline concerning the constitution and laws, legality and solidarity; sustainable development including environmental education, knowledge and protection of heritage and territory and digital citizenship.

In addition, the Ministry of Education supports various initiatives on the value of memory, in order to make students reflect on the tragedy of the Shoah and other tragic events of the history and on Legality.

Level of STEAM integration in formal secondary education

The Ministry of Education works on various projects that intend to give stimulus and innovation from laboratory teaching, problem solving and information technology, and aim to enhance the intrinsic nature of scientific-technological disciplines.

In addition, by law (n.107/2005) prior training objectives are "the enhancement and strengthening of language skills, with particular reference to Italian as well as to the English language and other languages of the European Union". Content Language Integrated Learning (CLIL) methodology is fostered besides strengthening the knowledge of minority languages and local languages thanks to the organizational and didactic autonomy.

Concerning arts such as music, cinema and theater, there is a National Committee for the practical learning of music committed to activating training courses focused on the development of musical practice at school.

Despite the variety of subjects and their integration in the school curriculum, in general there is a lack of collaboration between teachers of different disciplines, so that learning is generally enclosed and separated between subjects.

The Environmental Technical High School Elsa Morante – Conti Ginori and Scientific Lyceum Niccolò Copernico in Prato

The survey was carried out in two high schools located in Tuscany. The Environmental Technical High School Elsa Morante – Conti Ginori (Istituto d'Istruzione Superiore) and Scientific Lyceum Niccolò Copernico in Prato.

Students begin high school at the age of 14th and the high school has a duration of 5 years.



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The Environmental Technical High School Elsa Morante – Conti Ginori counts about 1500 students and it is a high school with two main learning addresses, one (Morante) more focused on science, humanities, economic studies and professional training such as welfare and social assistance services, aesthetics and hair dressing, while the other one (Conti Ginori) more technical with chemistry, environmental and medical biotechnologies.

The Scientific Lyceum counts about 1350 students organized in 52 classes. The school is characterized by the great variety of opportunities to exchange ideas and cultural experiences. Two are the learning addresses: Scientific Lyceum with science and humanistic studies and Linguistic Lyceum. Three enhanced sections have been activated since the 2020/21: one on biotechnologies and environment, one on math and one on languages. English is the foreign language taught in all sections while French and German are second languages and Spanish is an alternative.



Survey methodology

The survey was conducted through the administration of a questionnaire specific for each target group (students and teachers).

Teachers' and students' questionnaires were firstly administered on the 17th of May 2022 to the piloting school of the project (Elsa Morante – Conti Ginori Environmental Technical High School, in Florence) that participates in the project with one class. The students were invited by the representatives of the “environmental group” of the school. However, since the number of collected responses were not enough for a statistical representation, more schools (23rd of May) were invited among those with direct contacts with the project partners. The second most participating school was the Scientific Lyceum N. Copernico (High School) in Prato.

The administration to the students was conducted in the informatics laboratory of the schools and it took place on the 17th of May, and 8th-9th and 10th of June.

The survey addressed to students is divided into 5 sections:

- 1) Personal details regarding age and gender and grade of school (for avoiding the identification of the students, the name of the school was not requested).
- 2) Basis opinion on the themes of the project, for instance:
 - what students consider a Mediterranean diet, as all the partners are located in the Mediterranean region,
 - what they think about a healthy diet
 - what they think about a sustainable production and sustainable diet
 - the level of knowledge on specific terms
 - and what school subjects they would associate to food
- 3) Evaluation of transversal skills such as
 - work group
 - applying a scientific research process
 - use of camera and video making software
 - use of art to communicate ideas
 - use online App to assess food nutritional value or sustainability
 - assess the reliability of information in internet
- 4) Interest towards the themes of the project such as
 - climate change impacts on food production
 - food productions
 - impact of the food choices on the environment
 - impact of the food choices on health
 - healthy and sustainable diet
 - vantages of being a sustainable consumer
 - working together with other students
 - field work
 - to perform scientific research and practical activities
 - connect different subjects
 - to choose a topic of investigation
 - involve the family or other friends in the project



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- use Apps to assess food nutritional value or sustainability
- to communicate own experience and influence others' experience

The attitudes towards certain global issues such as climate change, and to change behavior for reducing the environmental impact,

The interest in teamwork and use of technologies and the trust towards information sources.

The interest in STEAM subjects.

- 5) Experience in food use (cooking, selecting the food, checking the origin of food, checking the nutritional value of food, using an App to assess food nutritional value or sustainability, search for the specific effects of certain foods on health, select organic food, and if there is a specific diet.

The questionnaire addressed to teachers is also divided in 5 sections and it follows the questions of the students.



Analysis of findings

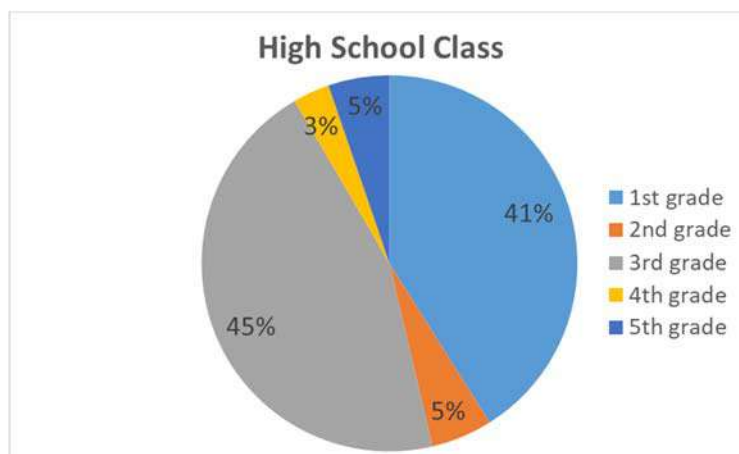
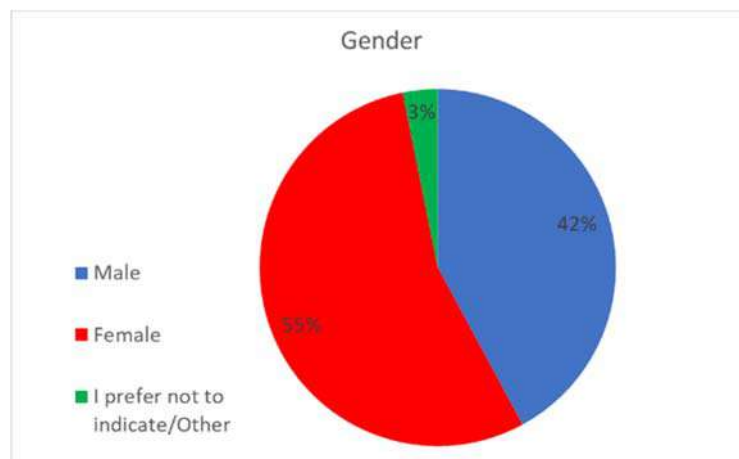
Students' survey

Profile

The total number of students participating in the survey was 102 but only 96 could be considered valid responses from the quality check made before applying any statistical calculation. The questionnaire was anonymous, and it is not possible to identify the school they belong to.

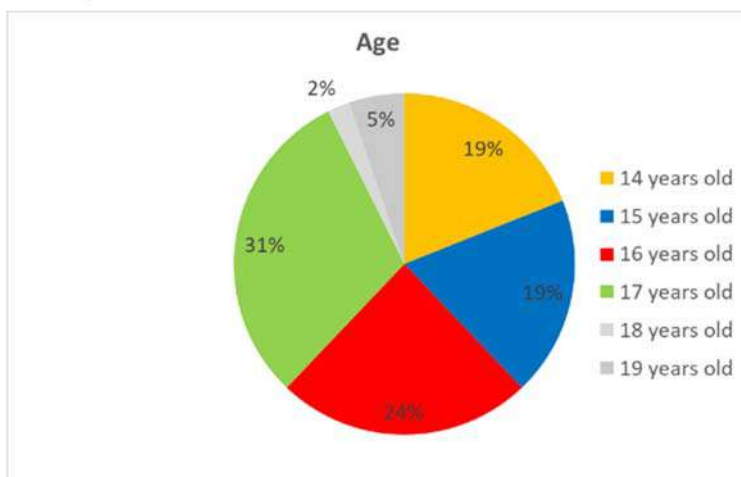
The female respondents were slightly more numerous than male respondents and only 3% preferred not to indicate/indicate "other".

Regarding the grade and age, most of the students were in grades 1st and 3rd, ranging between the age of 14 and 19, with a prevalence of 17 years old students (31%) (4th grade) and balanced distribution for the age 14-15 and 16.



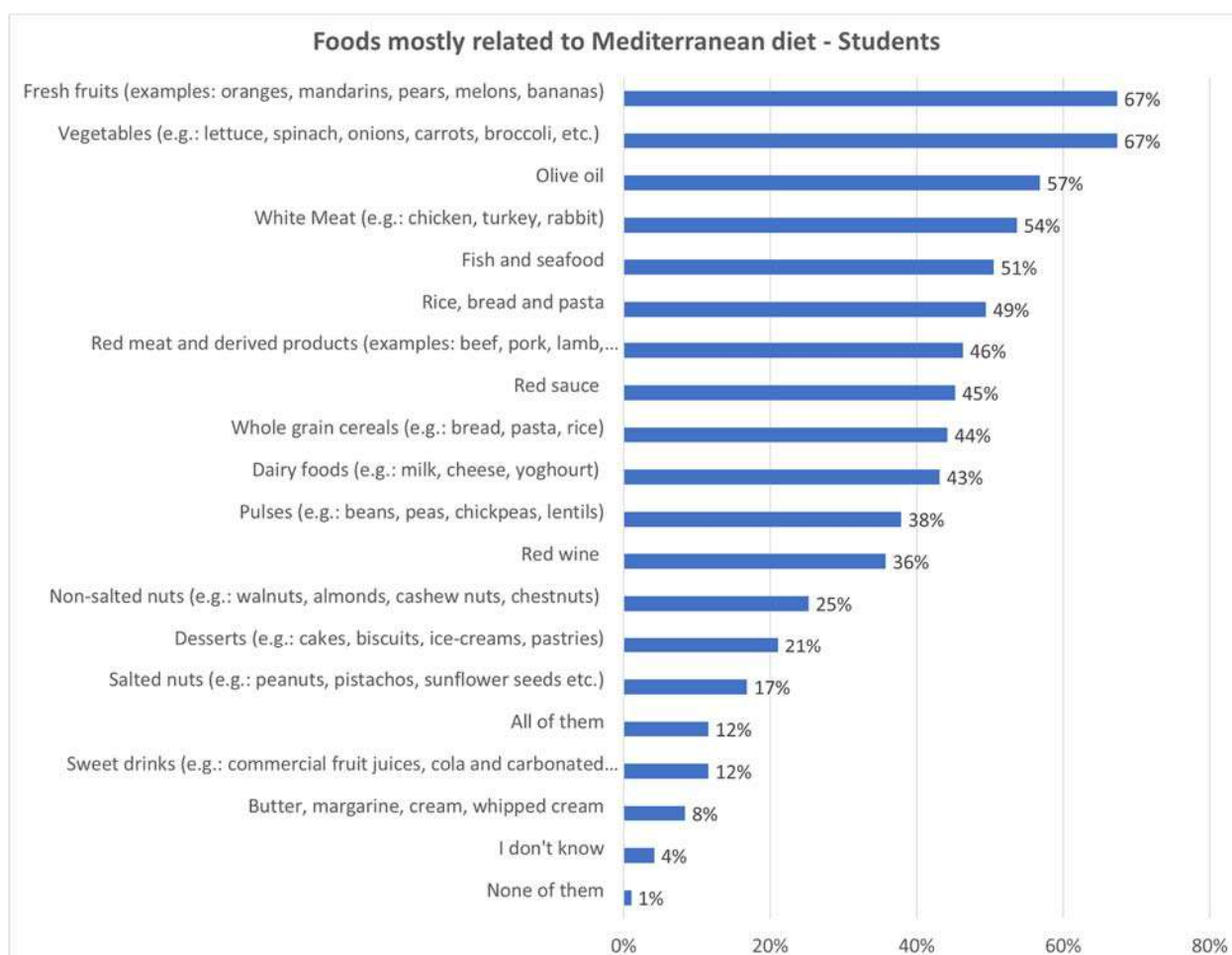


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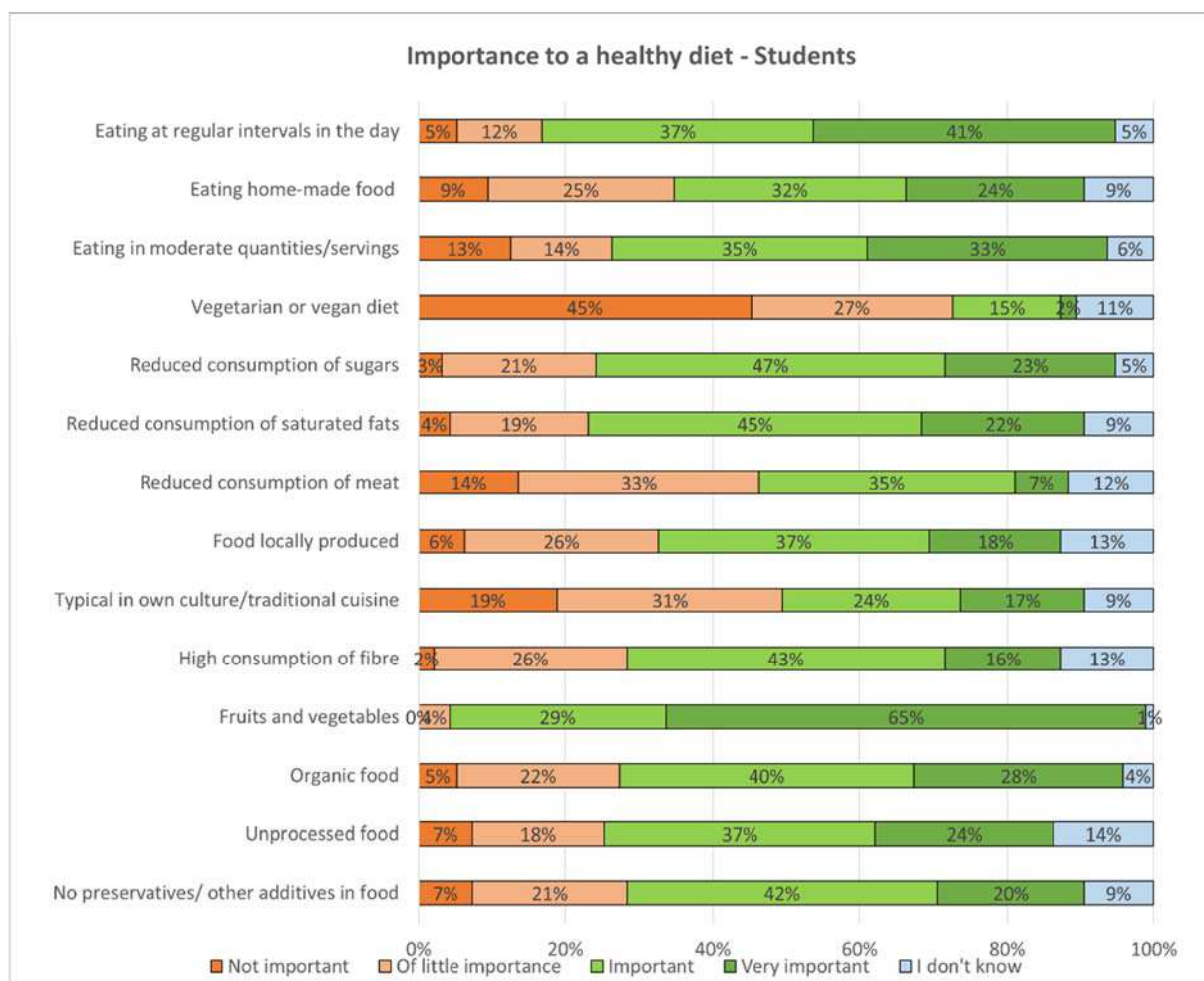
Knowledge

Most Italian students indicated that the most representative foods for the Mediterranean diet are “fresh fruits” and “vegetables” (67% students) and olive oil (57%). In addition, large majority selected also white meat (54%) and fish and seafood (51%). Other foods were also selected by little less than 50% students, such as rice, bread and pasta (49%), red meat (46%), red sauce (45%), whole grain cereals (43%) and dairy foods (43%).

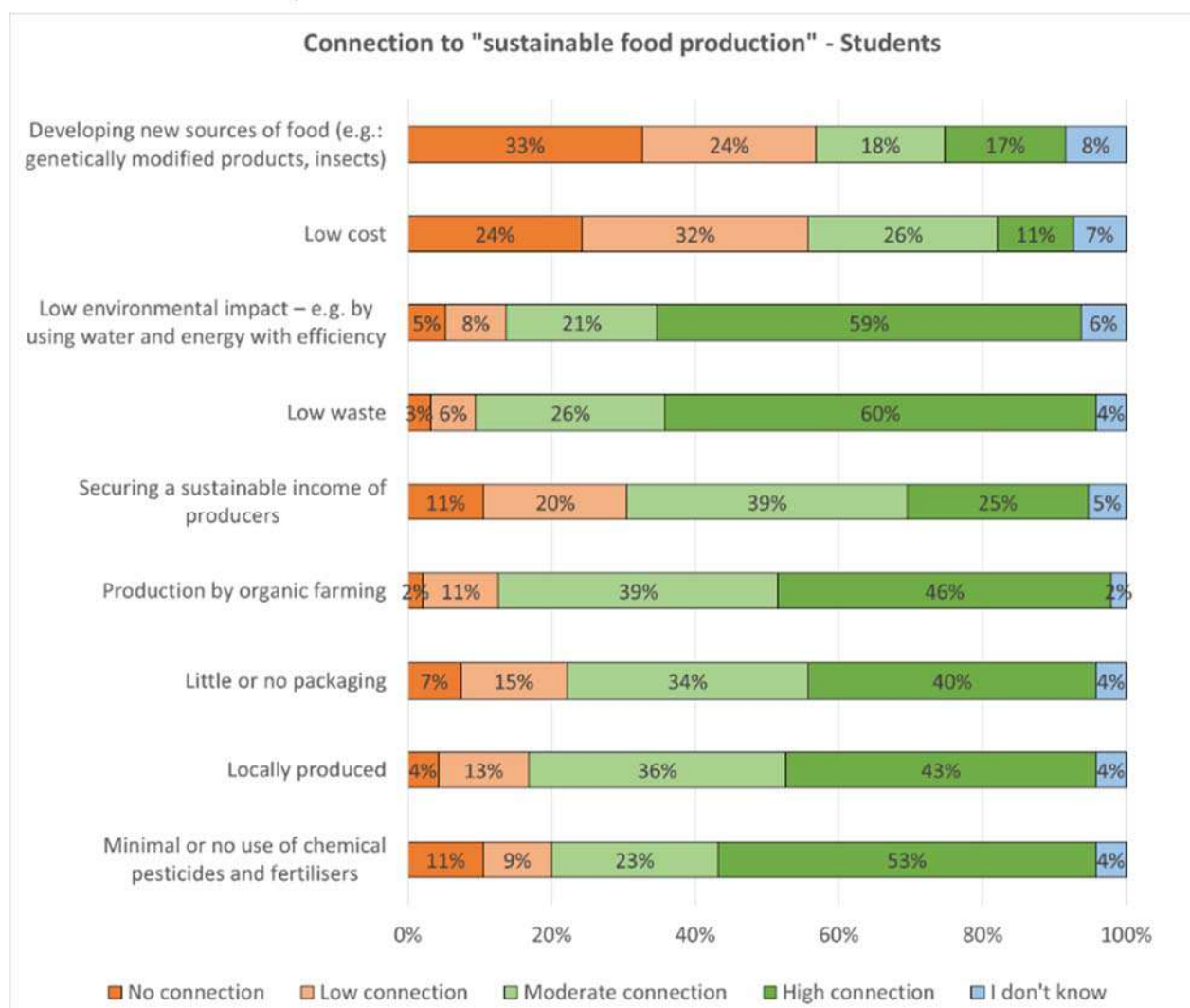




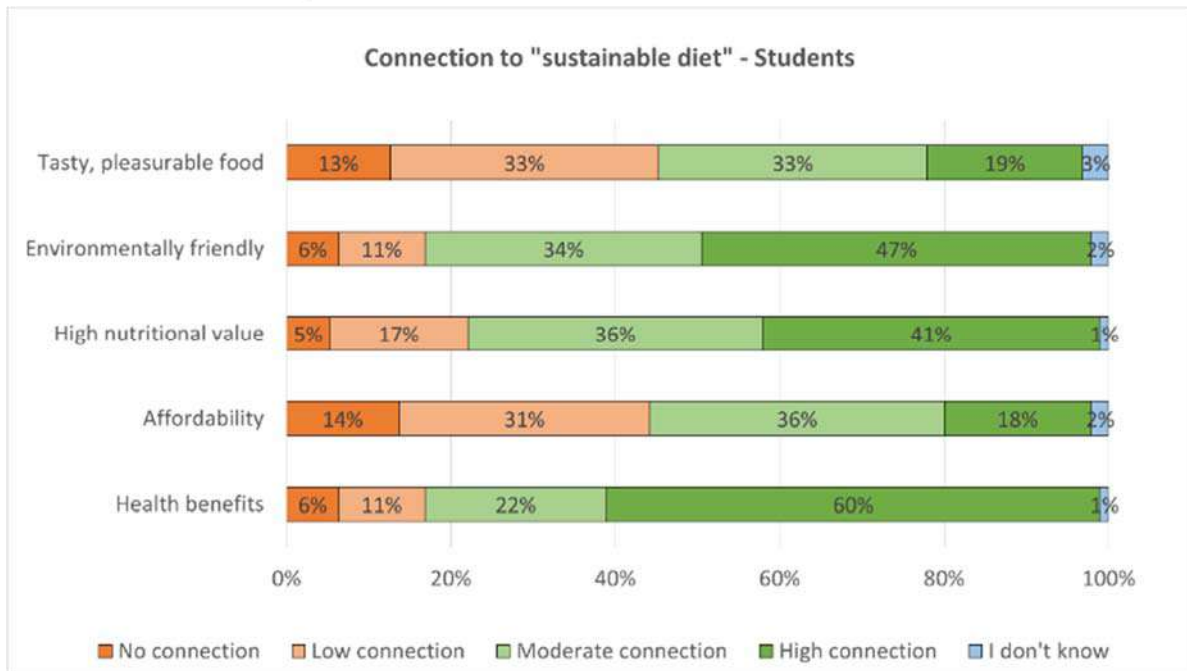
Students connect the concept of “**healthy diet**” mainly to the fact of eating at regular intervals (78% indicated as very important and important) use of fruit and vegetables (74%) although many other items were also largely considered important/very important such as “no preservatives” (62%), “unprocessed food” (61%), “organic food” (68%), reduced consumption of saturated fats (67%) and sugars (70%), eating in moderate quantities/servings (68%). Minor importance was given to a vegetarian or vegan diet (17%).



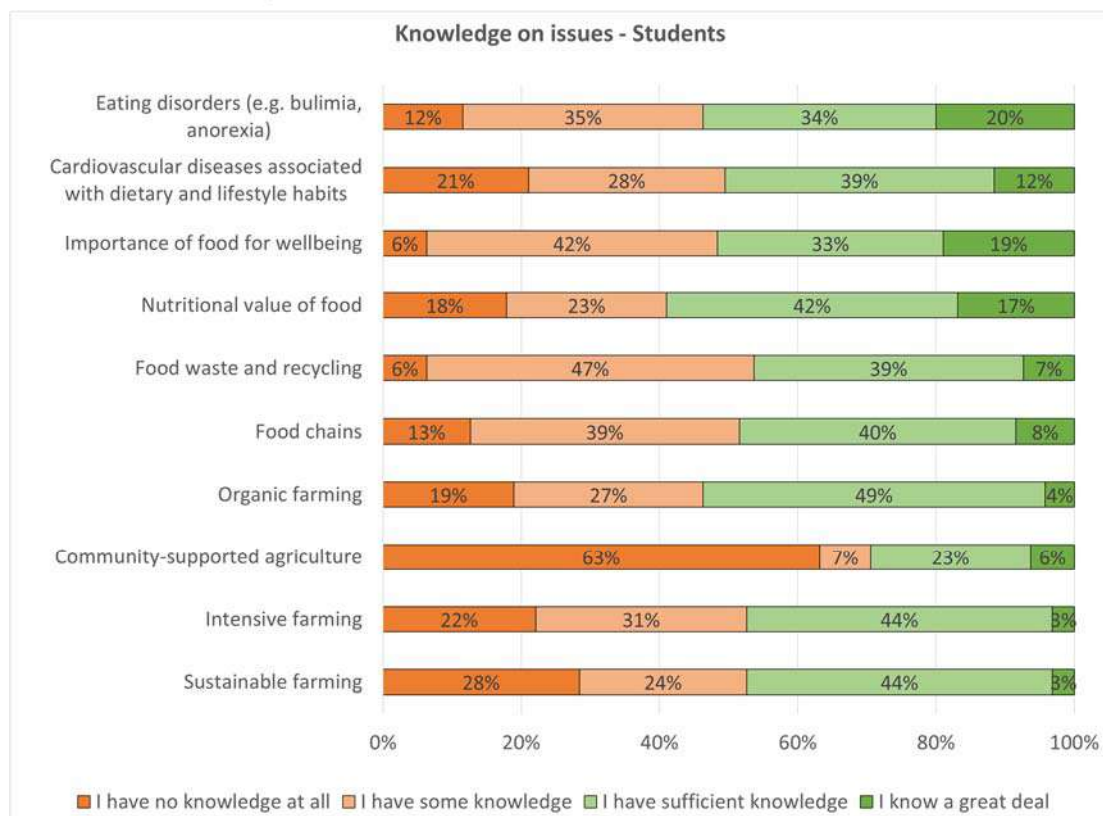
Regarding the **sustainable food production**, the majority of students connect it to great extent to the *low environmental impact*, *low production of waste* and to the *minimal use of chemical pesticides and fertilizers*. To lesser extent they also connect it to *organic agriculture*, *little or no packaging*, *local production* and, to the *sustainable income for producers*.



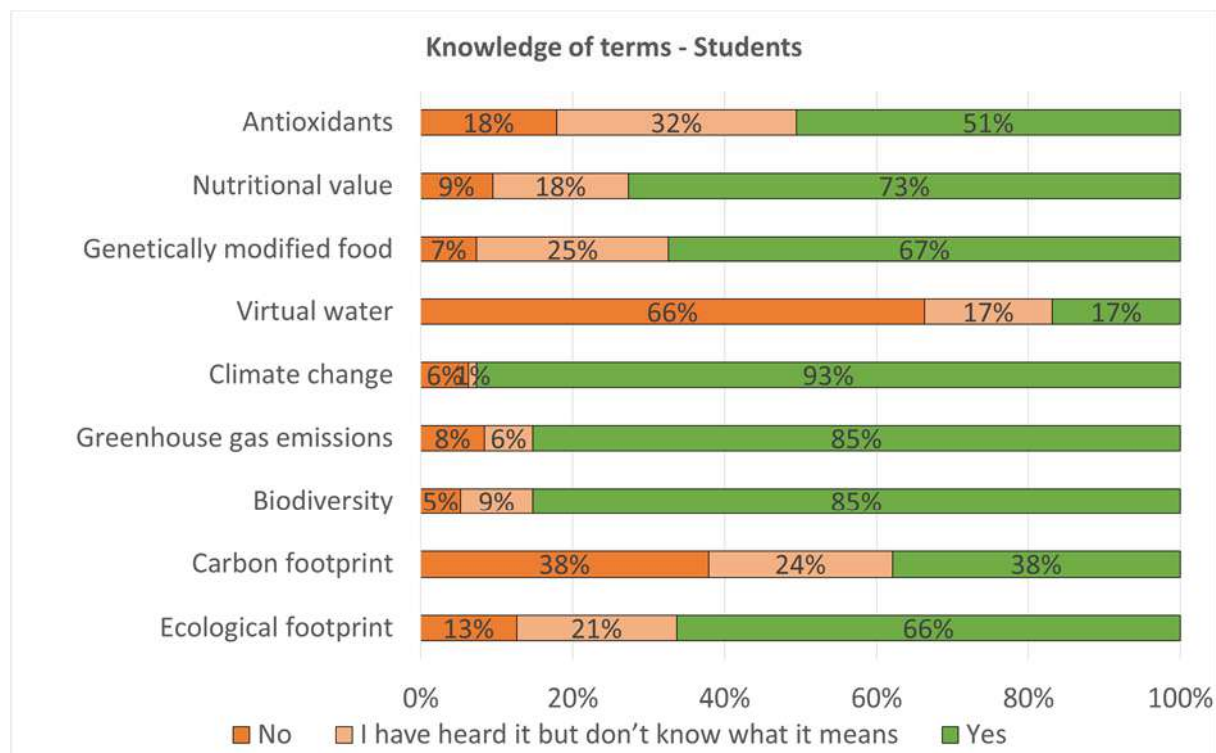
Regarding the **sustainable diet**, *healthy benefits* were strongly considered connected to it by 60% students, *environmentally friendly* and *high nutritional value* were also somewhat connected to the concept.



Regarding **students' knowledge** on general issues connected to food, it appears that most topics are partially known by half students, as the percentage of students knowing from sufficiently up to a great deal range from 47% (regarding intensive or sustainable farming) to 59% nutritional value of food). The least known topic is community-supported agriculture (only 29%).



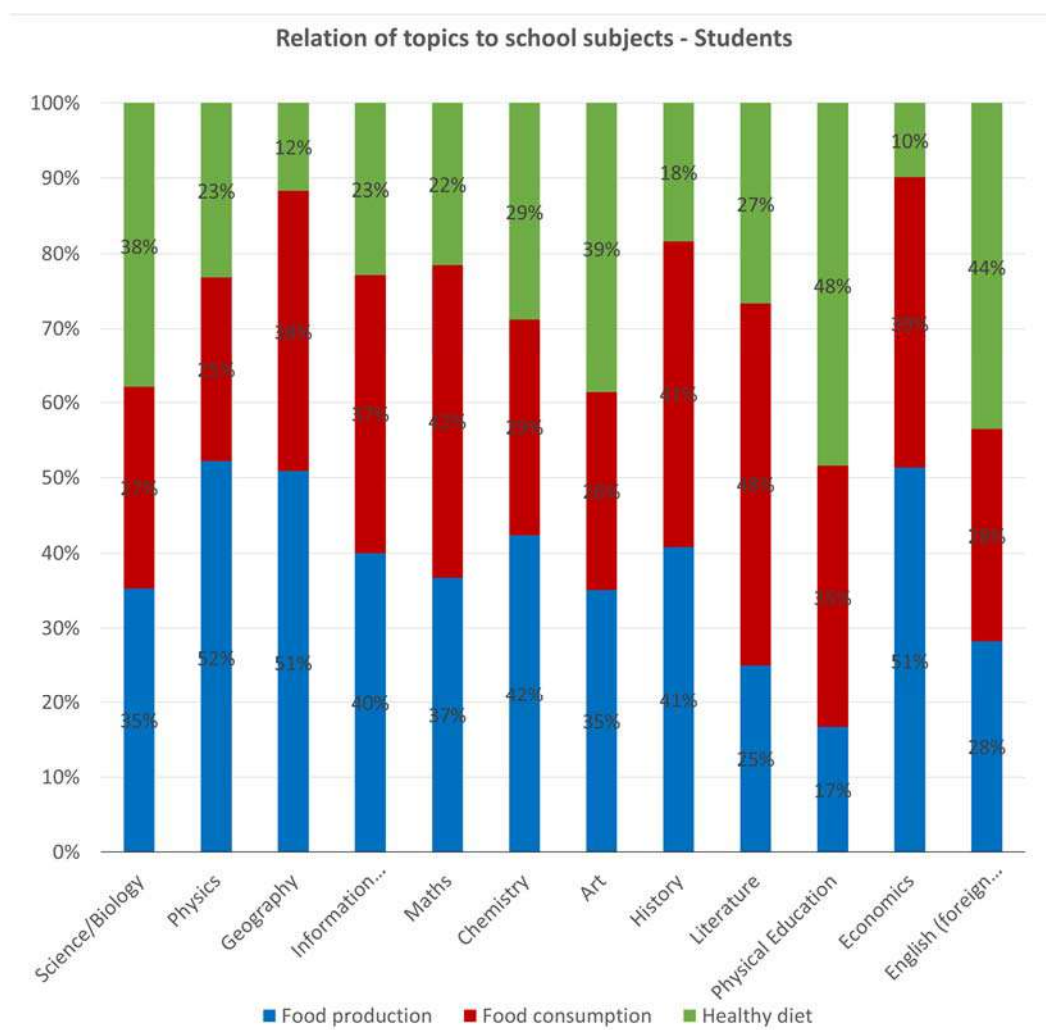
Regarding the knowledge of terms, some of them are pretty well known (by more than 85% students) such as *climate change*, *greenhouse emissions*, *biodiversity*. *Nutritional value* (73%), *genetically modified food* (67%) and *ecological footprint* (66%) are known to lesser extent while some other terms are little known such as *antioxidants* and *virtual water*.





The **question about the connection between school subjects and the three main topics** (food production, food consumption and healthy diet) evidenced how *science/biology* and *chemistry* are slightly evenly connected to the three topics, *physics* and *geography* are mostly connected to food production, *information technologies* and *math* are evenly connected mainly to food production and consumption.

Regarding the humanistic studies, *history* is highly connected to food consumption and production, *literature* to food consumption and *physical education* to healthy diet. Finally, *art* and *English* are slightly evenly connected to the three topics, mainly to healthy diet.



Skills

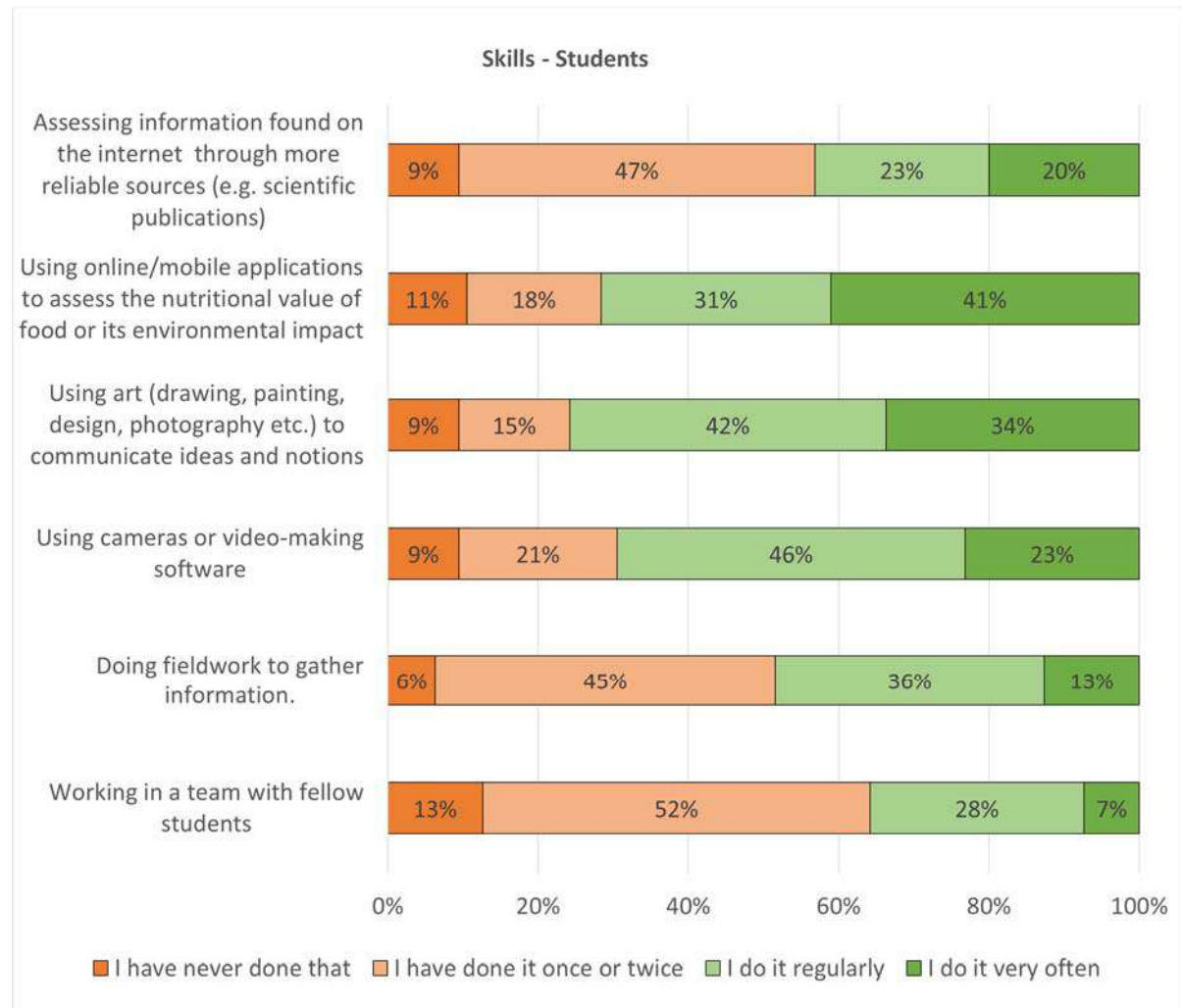
Students are familiar with

- Using online/mobile applications to assess the nutritional value of food (72% students do it, and 41% do it often).
- Using art to communicate ideas and notions (76% students do it, and 36% do it often).
- Using cameras or video-making (69% students do it, and 23% do it often).



Students are not familiar with

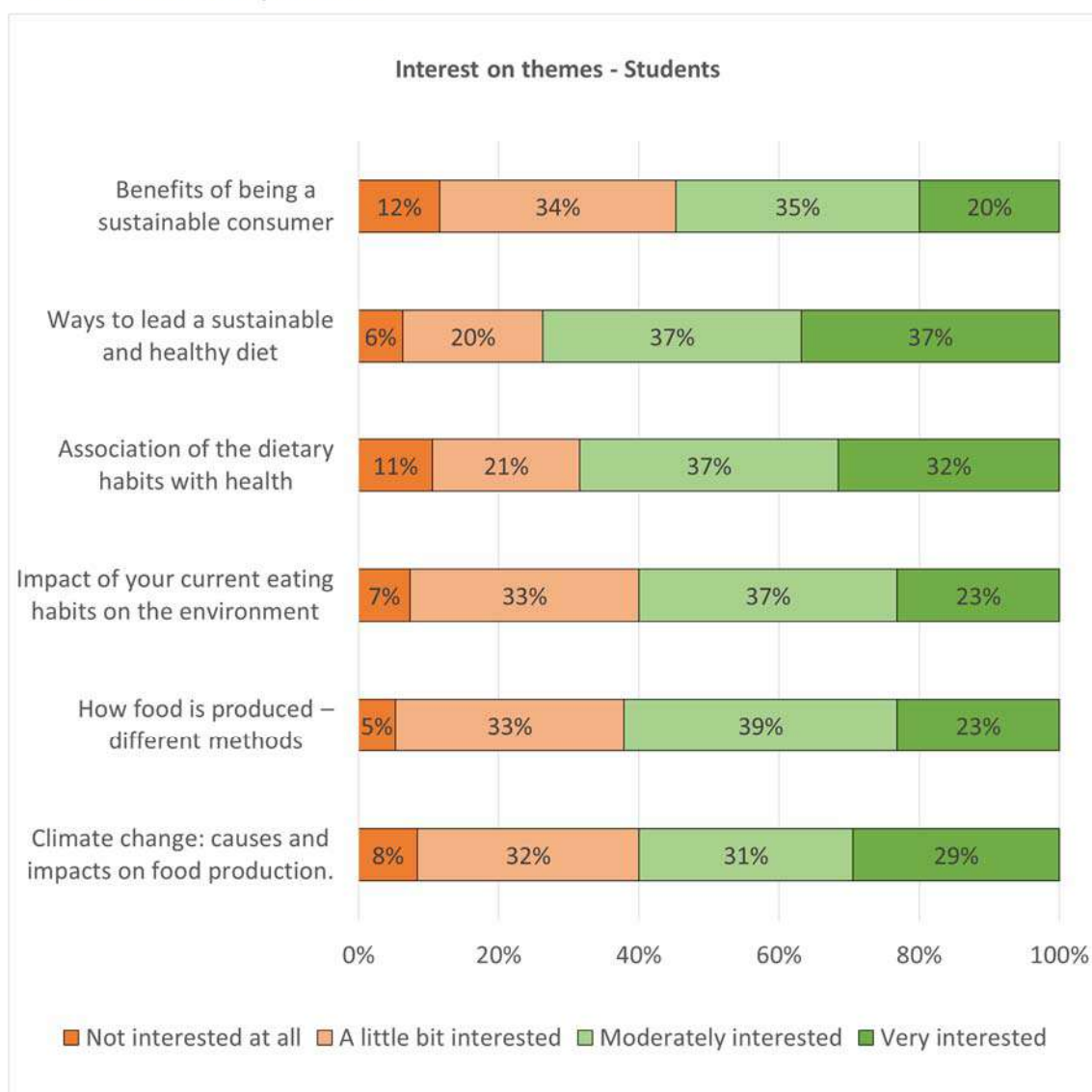
- Assessing information found in internet (56% have never done it or done it once or twice)
- Doing field work to gather information (51% have never done it or done it once or twice)



Interests on themes

Students are interested in

- Knowing about ways to led a sustainable and healthy diet (74% students are interested, among which 37% very much interested).
- Knowing about the association of the dietary habits with health (69% students are interested, among which 32% very much interested).
- Also the other topic are potentially interesting, such as *how food is produced*, and the *impact of eating habits on the environment and climate change causes and impacts on food productions*.

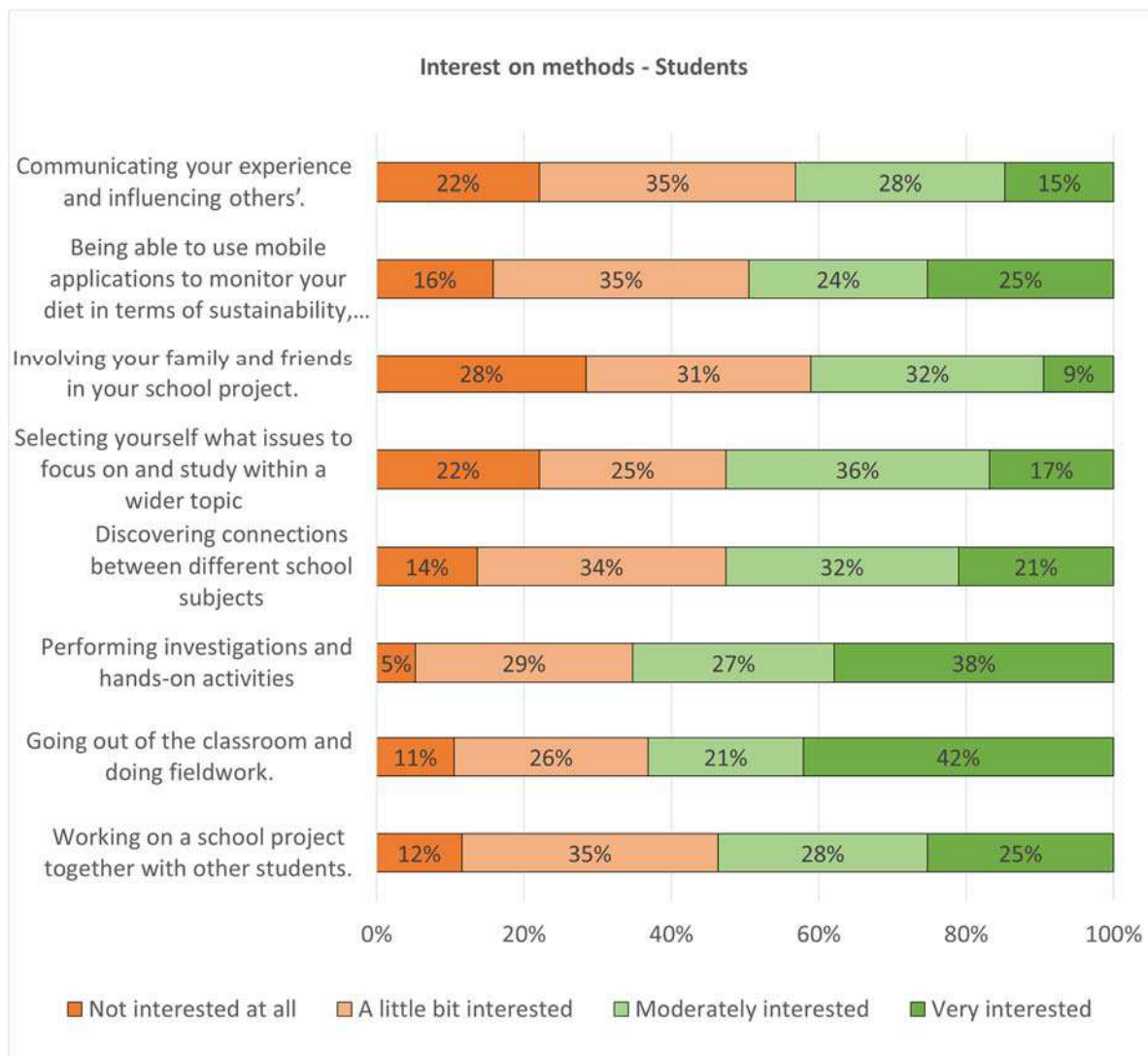


Students are mostly interested in:

- *Going out of the classroom and doing fieldwork* (63% students are interested, among which 42% very interested)



- *Performing investigations and hands-on activities* (65% students are interested, among which 38% very interested)
- Then, 53% are interested in *working together with other students, discovering connections between school subjects, and selecting the issue to focus on.*

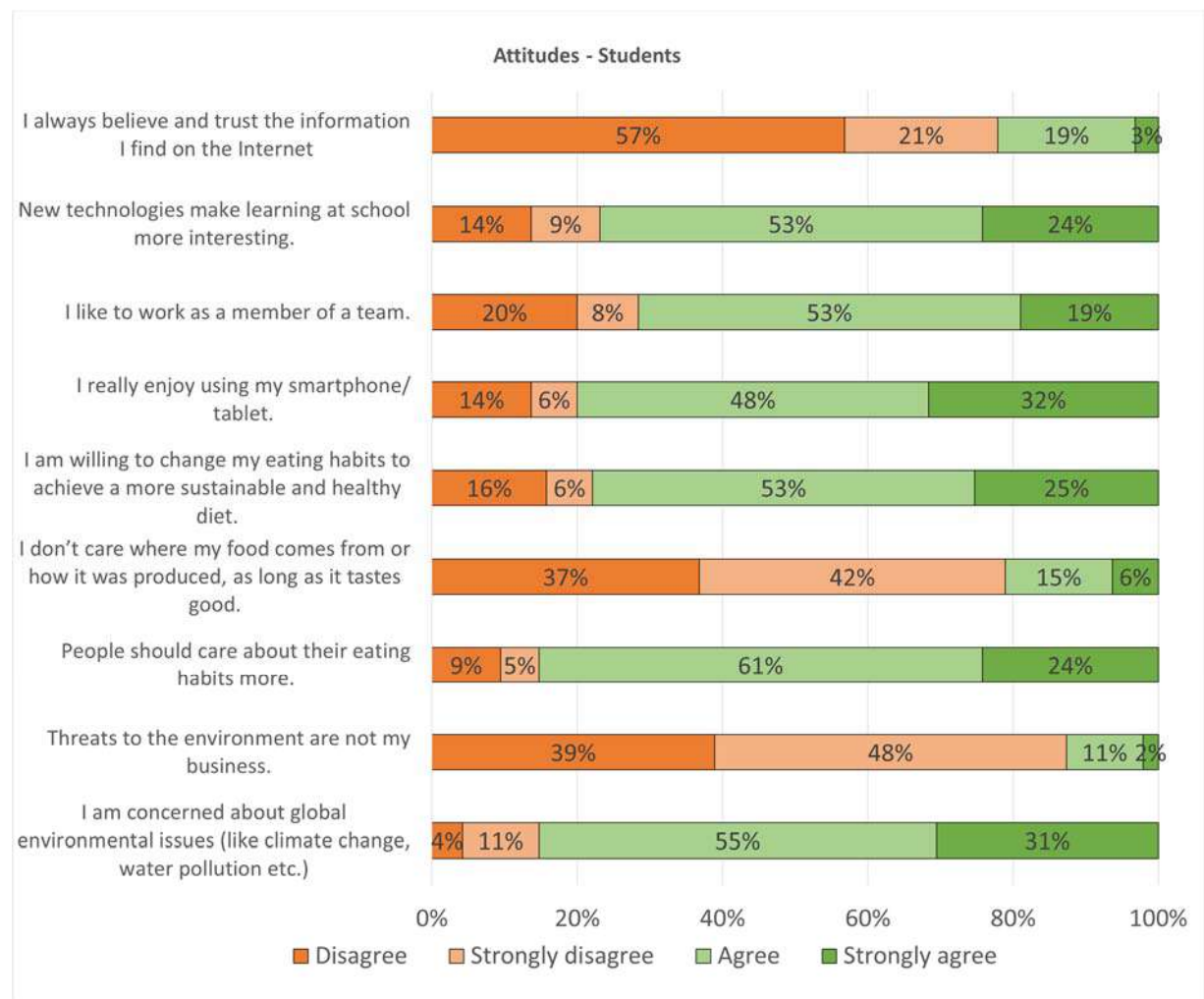




Regarding their attitudes, students are very sensitive to ecological and environmental issues. They agreed with large majority on the following items: *I am concerned about global environmental issues* (like climate change, water pollution etc.) (selected by 84% students) and *People should care about their eating habits more* (85% total agreements)

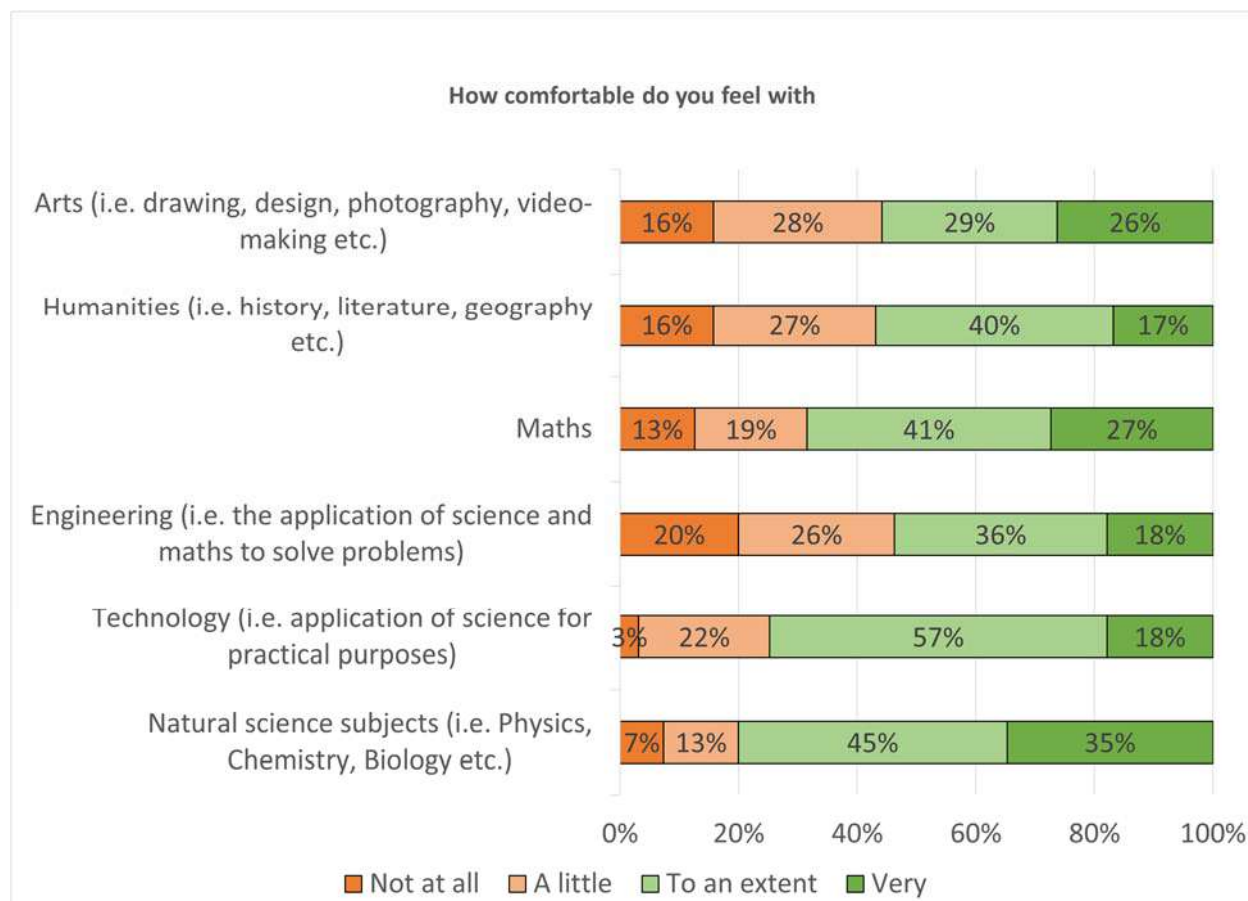
78% students are also willing to change eating habits to achieve a more sustainable and healthy diet.

Concerning the tools and methods to get knowledge, 80% enjoys using smartphones and tablets (among which 32% strongly agrees on that) and also the large majority agrees on the item *New technologies make learning at school more interesting* (77%) and on *I like to work as a member of a team* (72%).

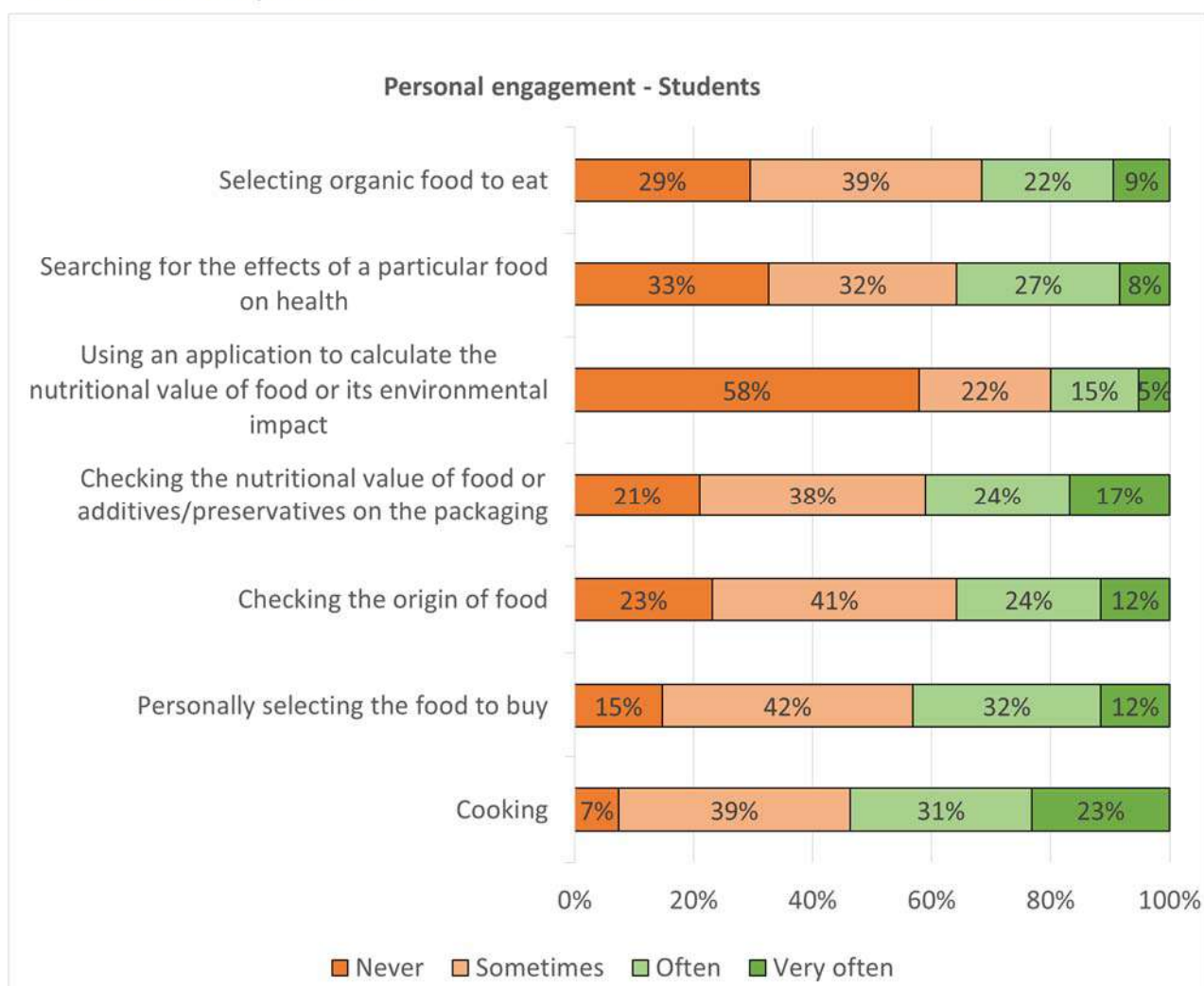




Regarding the subjects with which students feel comfortable, surprisingly, science, technology and maths are the subjects selected to greater extent, as compared to arts and humanities.



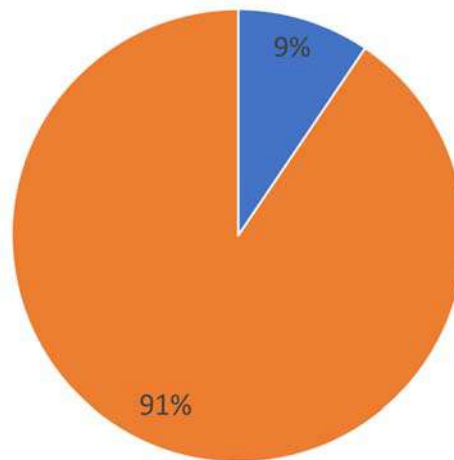
They are not really engaged in doing home activities in relation to food. Around 20%-30% have never done activities such as *selecting organic food*, *searching for the effects of specific food*, *checking the origin of the food or its nutritional value*, and most of them (58%) have never used an application to calculate the nutritional value of food or its environmental impact. The activities that may have done to greater extent, are *cooking* and going for *buying food*.



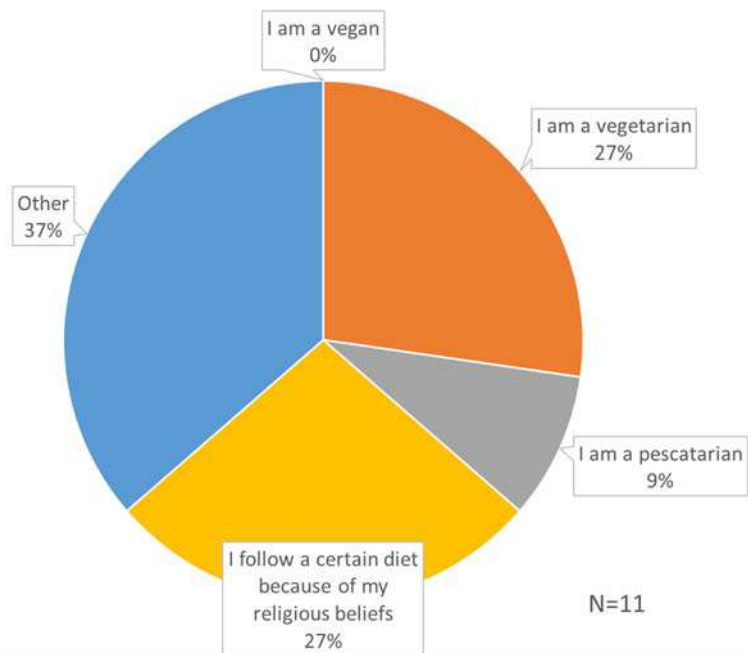
Most students (91%) do not follow a specific diet, while only 11 students are mostly vegetarian, or have specific religion believes or are pescatarians.



Have you chosen a specific diet? (N=96)



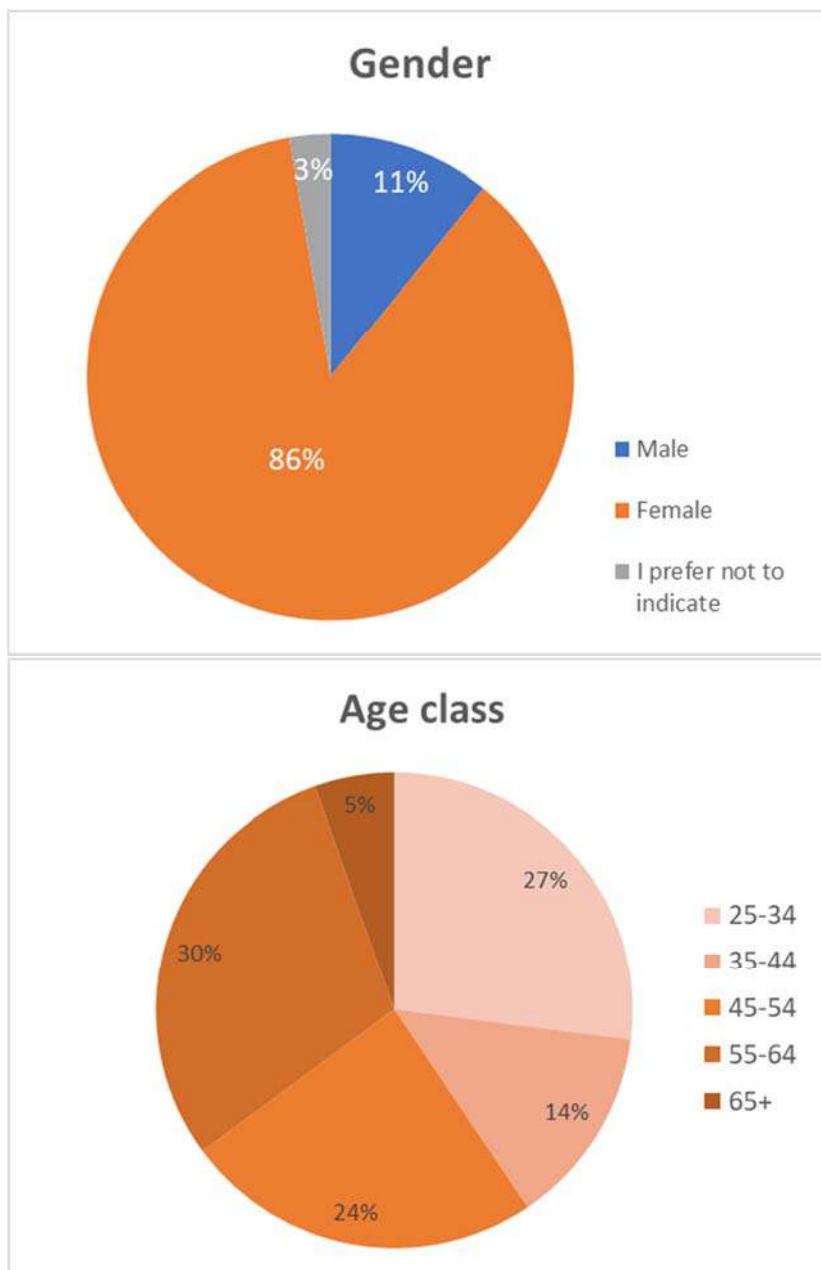
■ Yes ■ No





Teachers' survey

Profile



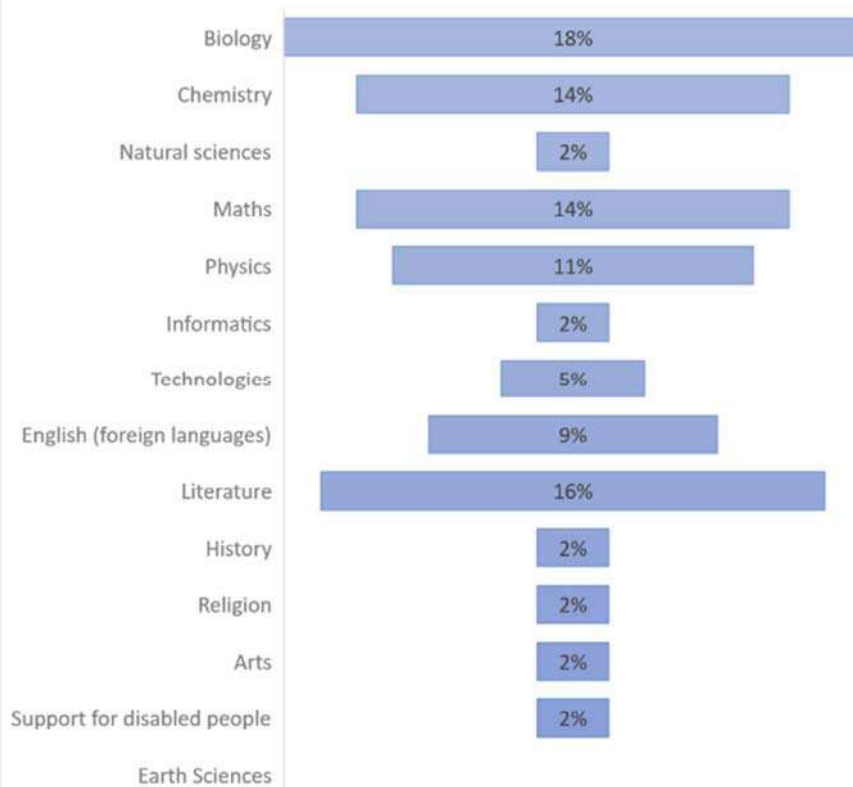
Most teachers (67%) teach in all grade levels, to students from the age of 14/15 to 18/19. 25% teachers teach to students of the first and second grade (age of 14/16) and 8% to older students (16-19 years old).

The female teachers were slightly more numerous than male teachers and only 3% preferred not to indicate/indicate "other".

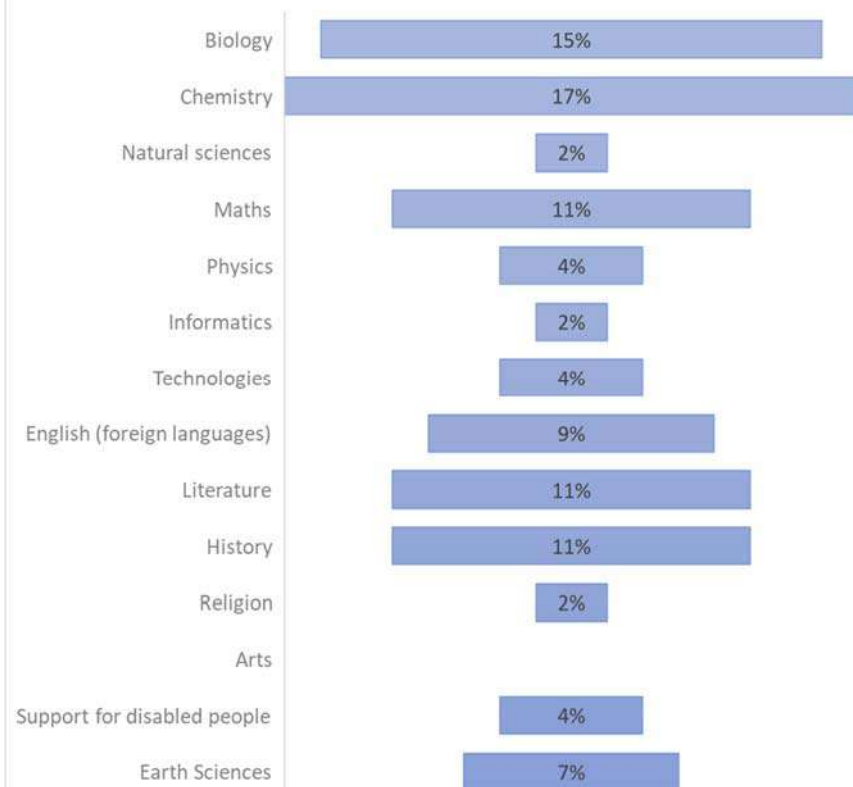
Most teachers are between 55 and 64 years old, with a balanced distribution of teachers aged 25 and 34 and teachers aged 45 and 54.



Specialization



Teaching subjects

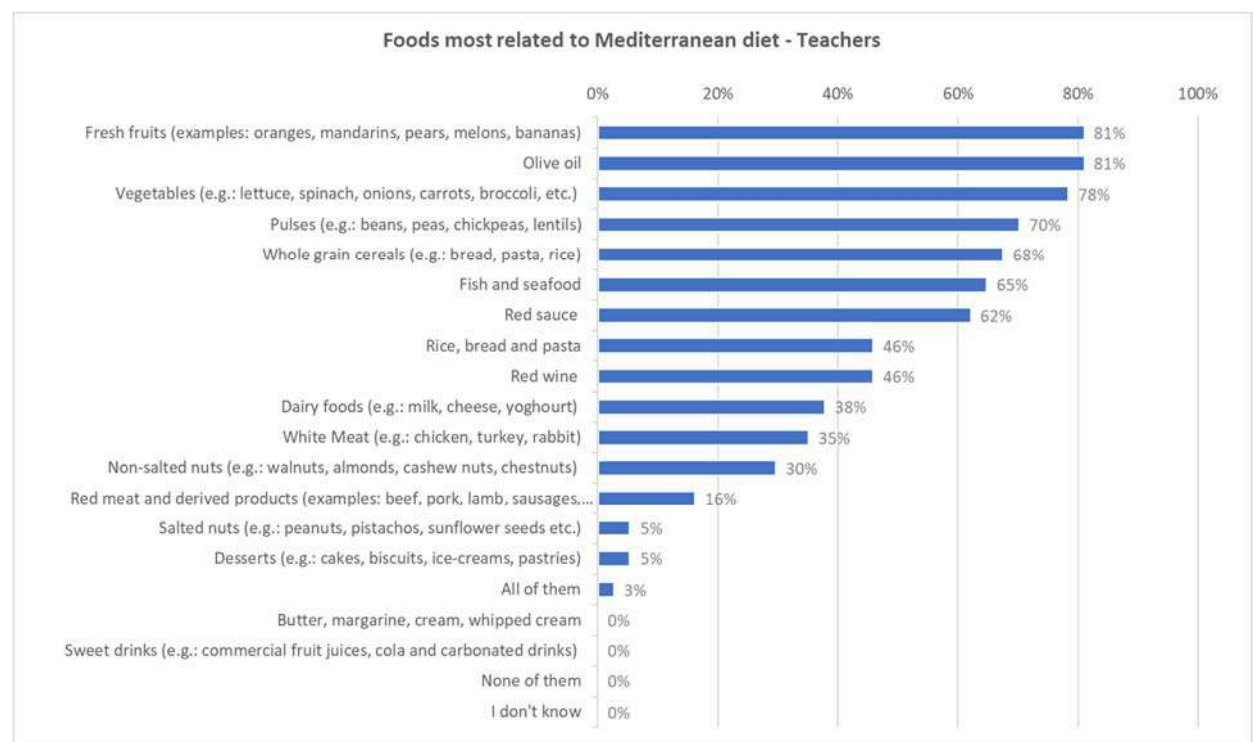




The proportion of teachers whose specializations are Biology (18%), Chemistry (14%), Maths (14%), Technologies (5%), Support for disabled people (2%), Arts (2%) and that of those whose teaching subjects are Biology (15%), Chemistry (17%), Maths (11%), Technologies (4%), Support for disabled people (4%) are almost in balance. The proportion of teachers whose specializations are natural Sciences (2%), Informatics (2%), English (9%), Religion (2%) and that of those whose teaching subjects are Natural sciences (2%), Informatics (2%), English (9%), Religion (2%) are in perfect balance. Teachers whose specialization is Physics are 11%, while teachers whose teaching subjects are Physics are only 4%. Literature lesson is like Physics lesson. The specialization rate of the course is higher than the teaching subject. Teachers whose specialization is Literature are 16%, while teachers whose teaching subjects are Literature are 11%. There is a lot of difference in the rate in the History lesson compared to other lesson. Teachers whose specialization is History are only 2%, while teachers whose teaching subjects are History are 11%. While there is a specialization rate in Religion lesson (2%), there is no Religion lesson rate in teaching subjects. Earth science lesson has the opposite ratio of Religion lesson. Although there is no specialization rate in Earth Science lesson, it has 7% of teaching subjects.

Knowledge

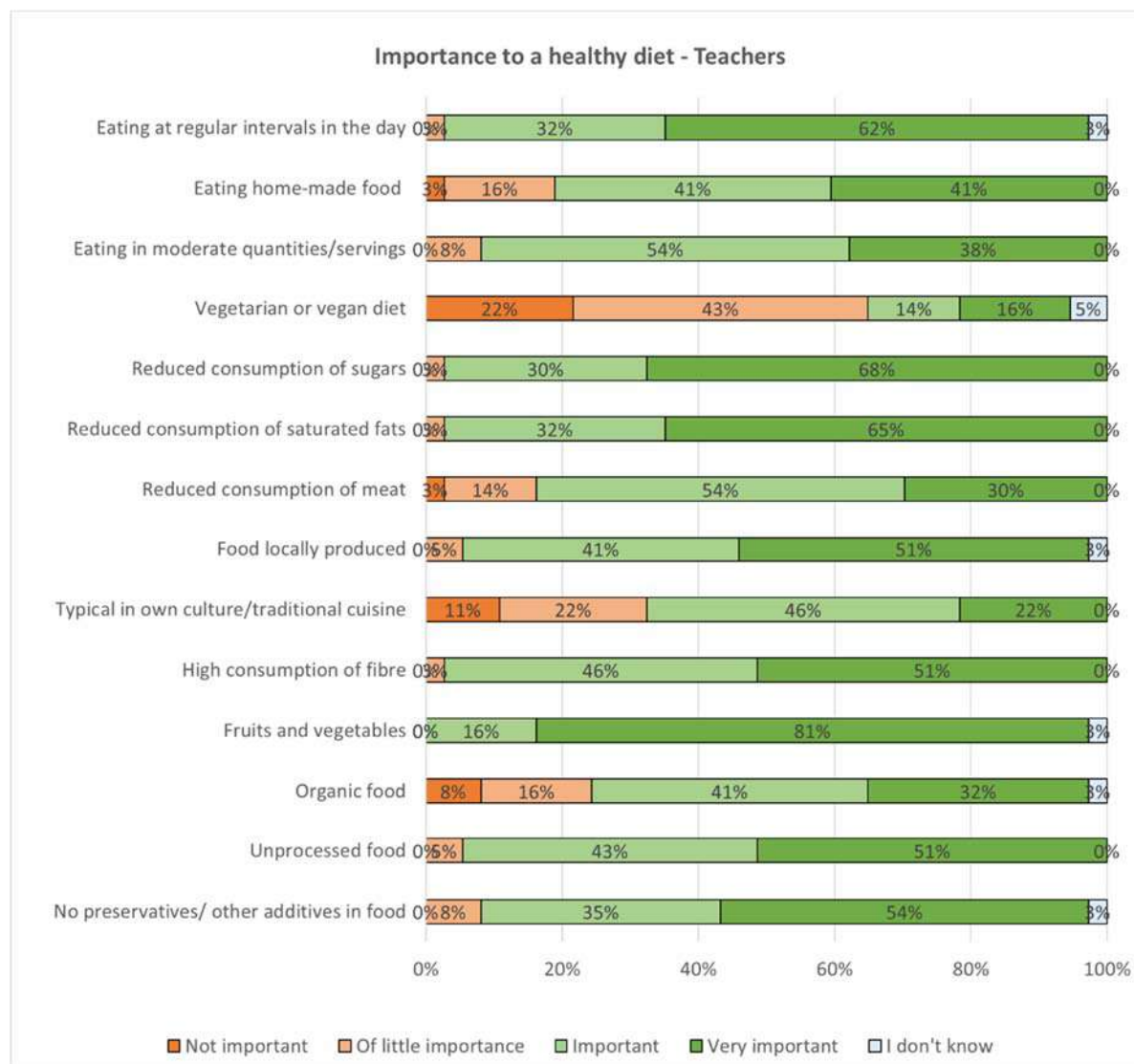
Most teachers indicated that the most representative foods for the Mediterranean diet are “fresh fruits” and “olive oil” (81% teachers) and vegetables (78%). In addition, large majority also selected pulses (70%), whole grain cereal (68%), fish and seafood (65%) and red sauce (62%). Other foods were also selected by little less than 50% teachers, such as rice, bread and pasta (46%), red wine (46%), dairy foods (38%) and white meat (35%).



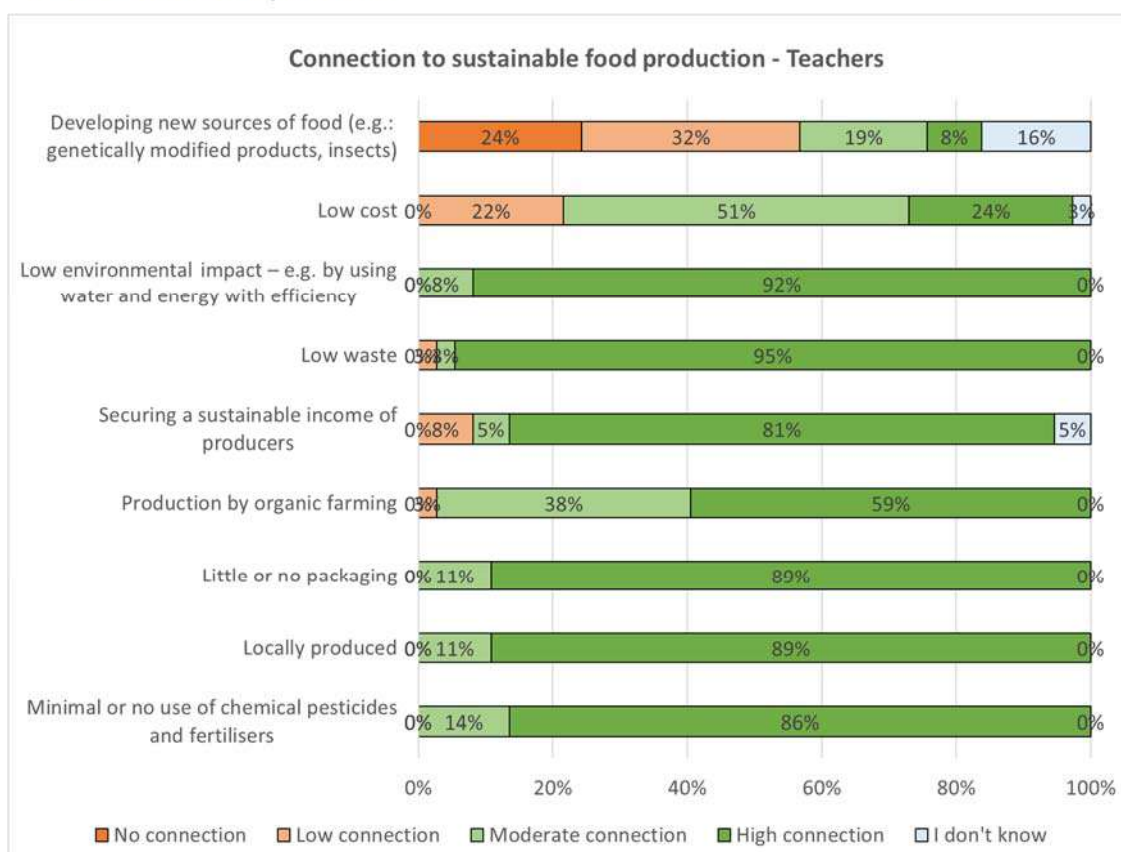
Teachers connect the concept of “healthy diet” mainly to the fact of eating at regular intervals (94% indicated as very important and important) use of fruit and vegetables (81%) although



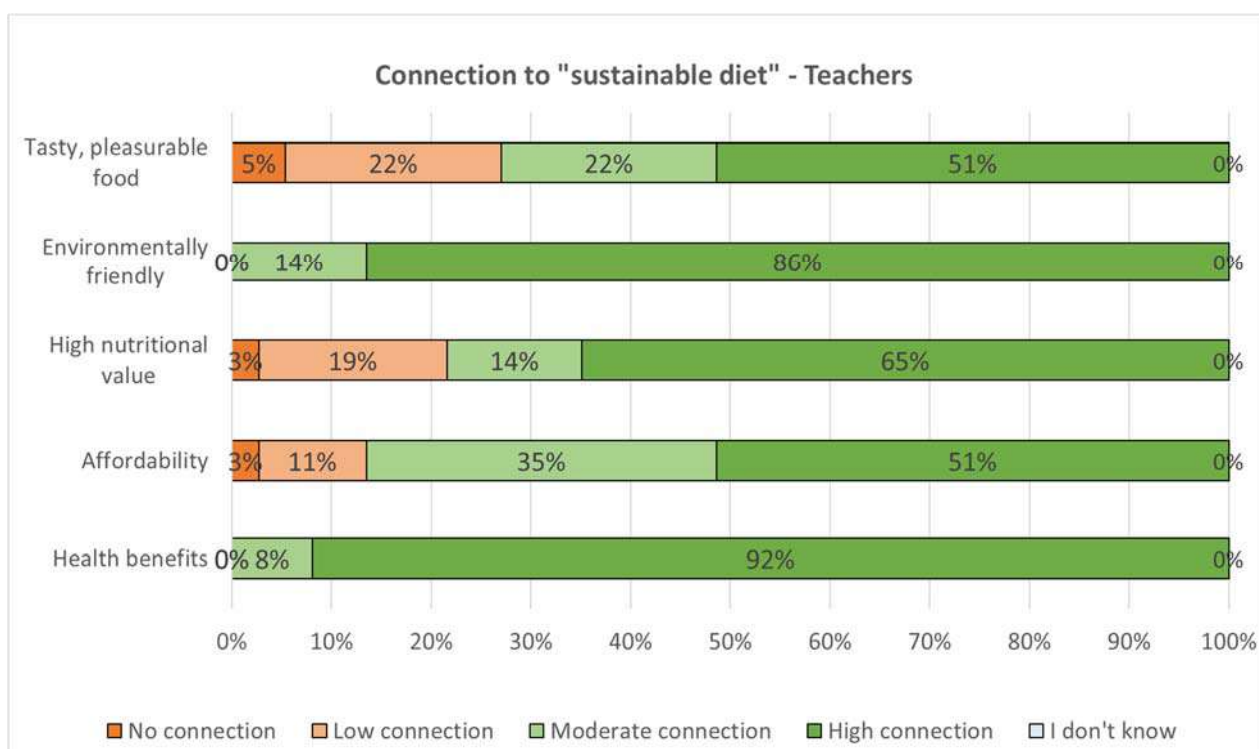
many other items were also largely considered important/very important such as “no preservatives” (89%), “unprocessed food” (94%), “organic food” (73%), reduced consumption of saturated fats (97%) and sugars (98%), eating in moderate quantities/servings (92%). Minor importance was given to a vegetarian or vegan diet (30%).



Regarding the sustainable food production, the majority of teachers connect it to great extent to the low production of waste, little or no packaging, local production, to the minimal use of chemical pesticides and fertilizers, low environmental impact and to the sustainable income for producers. To lesser extent they also connect it to organic agriculture and low cost.

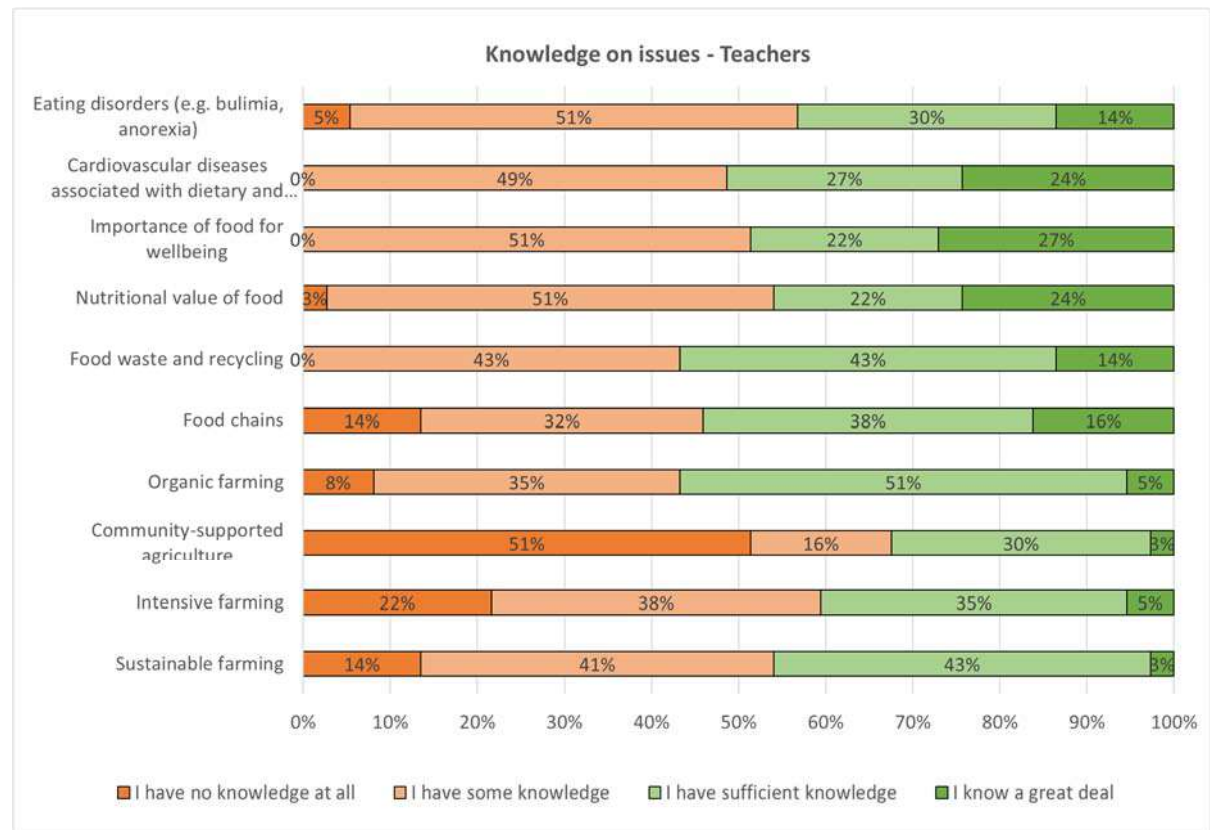


Regarding the sustainable diet, healthy benefits were strongly considered connected to it by 92% teachers, environmentally friendly and high nutritional value were also somewhat connected to the concept.

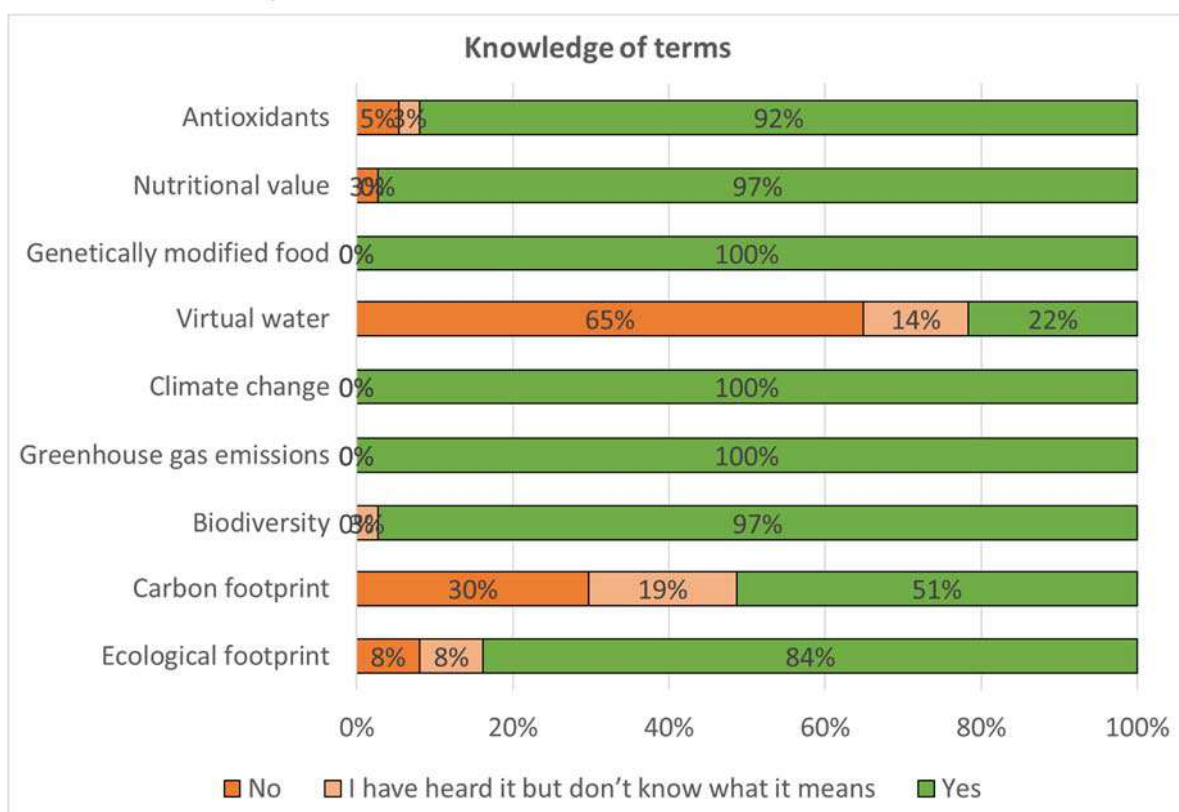




Regarding teachers' knowledge on general issues connected to food, it appears that most topics are partially known by half teachers, as the percentage of teachers knowing from sufficiently up to a great deal range from 46% (regarding intensive or sustainable farming) to 46% nutritional value of food). The least known topic is community-supported agriculture (only 33%).

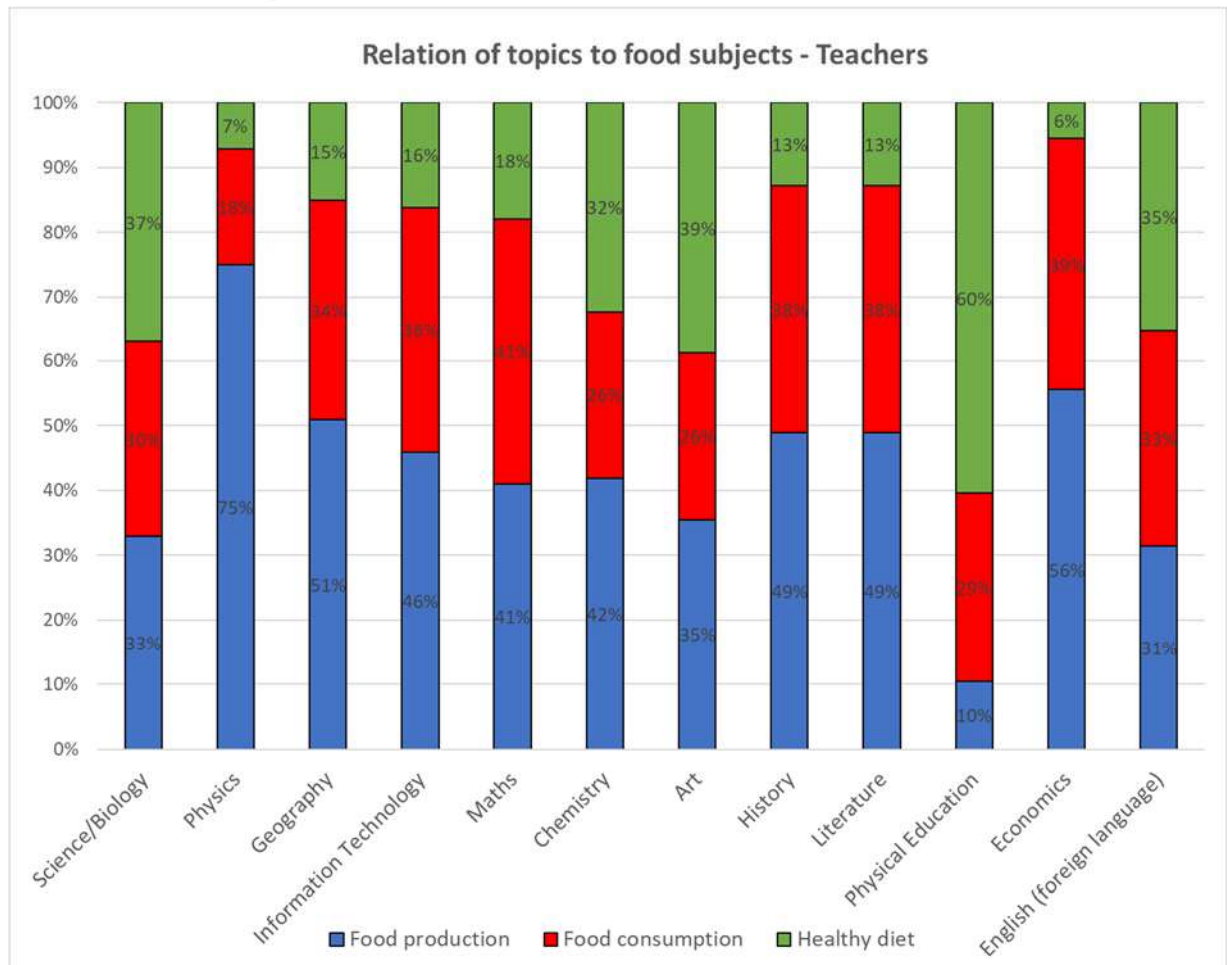


Regarding the knowledge of terms, some of them are pretty well known (by more than 90% teachers) such as climate change, greenhouse emissions, biodiversity, antioxidants, nutritional value, genetically modified food. Ecological footprint (84%), carbon footprint (51%) are known to lesser extent while some other terms are little known such as virtual water.



The question about the connection between school subjects and the three main topics (food production, food consumption and healthy diet) evidenced how *science/biology* and *English* are slightly evenly connected to the three topics, *physics*, *economics* and *geography* are mostly connected to food production, *information technologies* is evenly connected mainly to food production and consumption.

Regarding the humanistic studies, *maths* is highly connected to food consumption and production, *literature* to food consumption and *physical education* to healthy diet. Finally, *art* and *chemistry* are slightly evenly connected to the three topics, mainly to healthy diet.



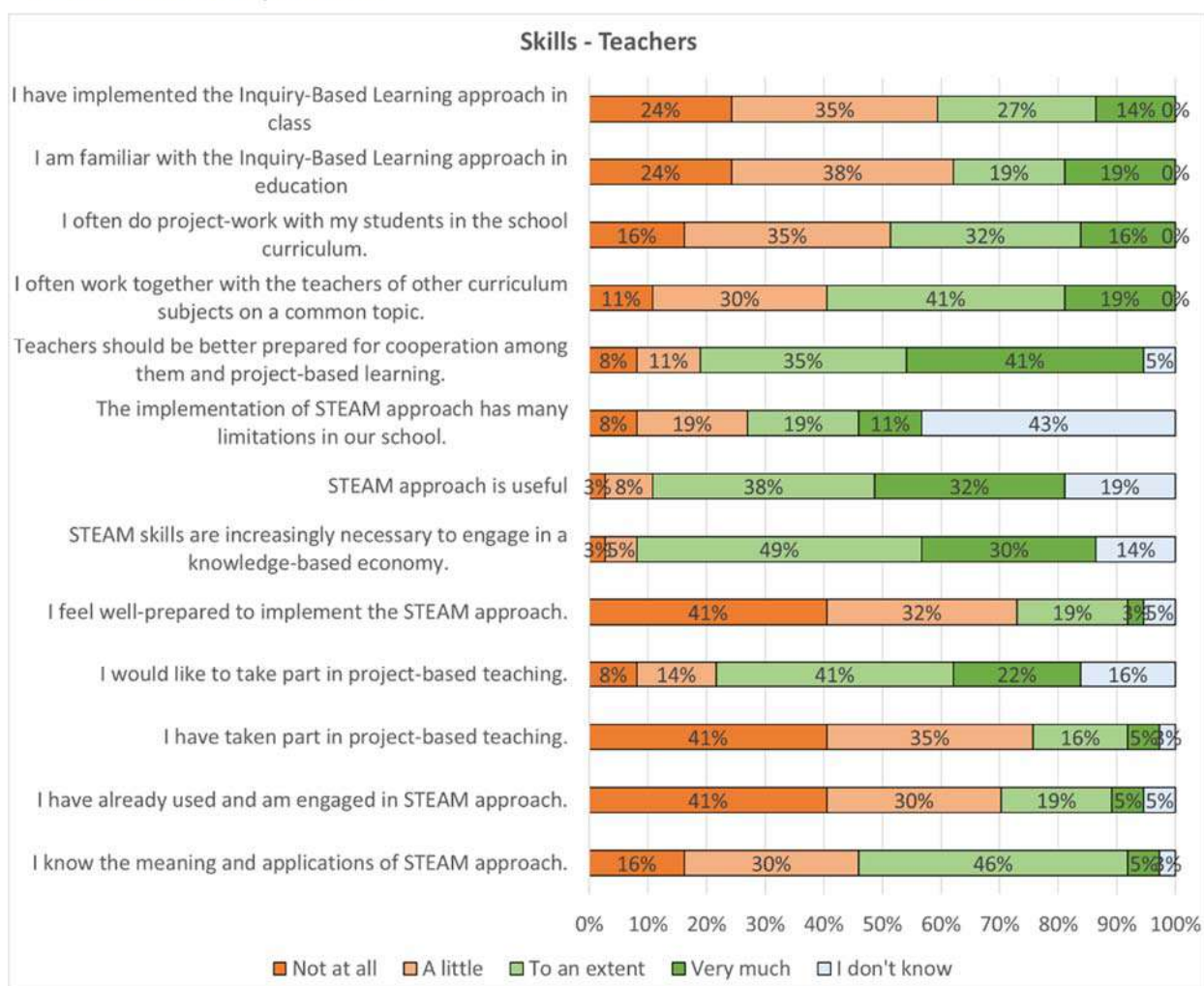
Skills

Teachers are familiar with

- STEAM skills are increasingly necessary to engage in a knowledge-based economy (79% teachers know, and 49% to an extent)
- Prepared for cooperation among them and project-based learning. (76% teachers know, and 35% to an extent).
- Would like to take part in project-based teaching. (63% teachers do it, and 41% to an extent.)

Teachers are not familiar with

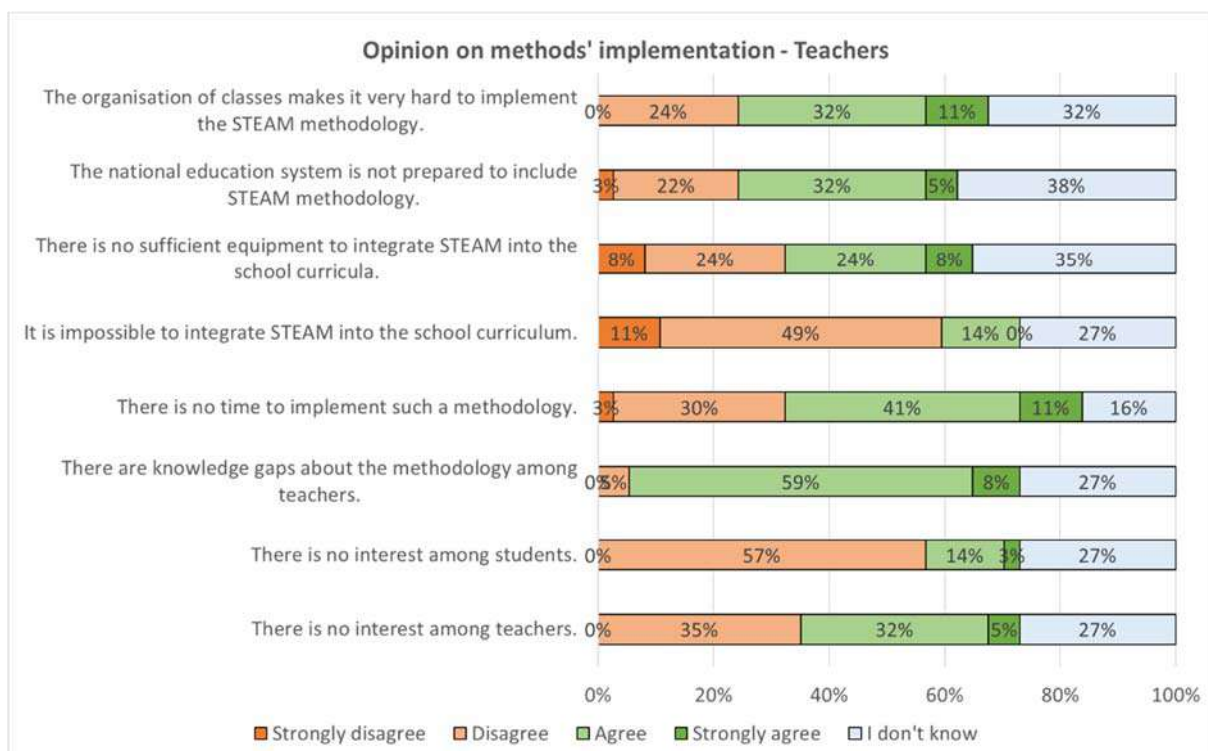
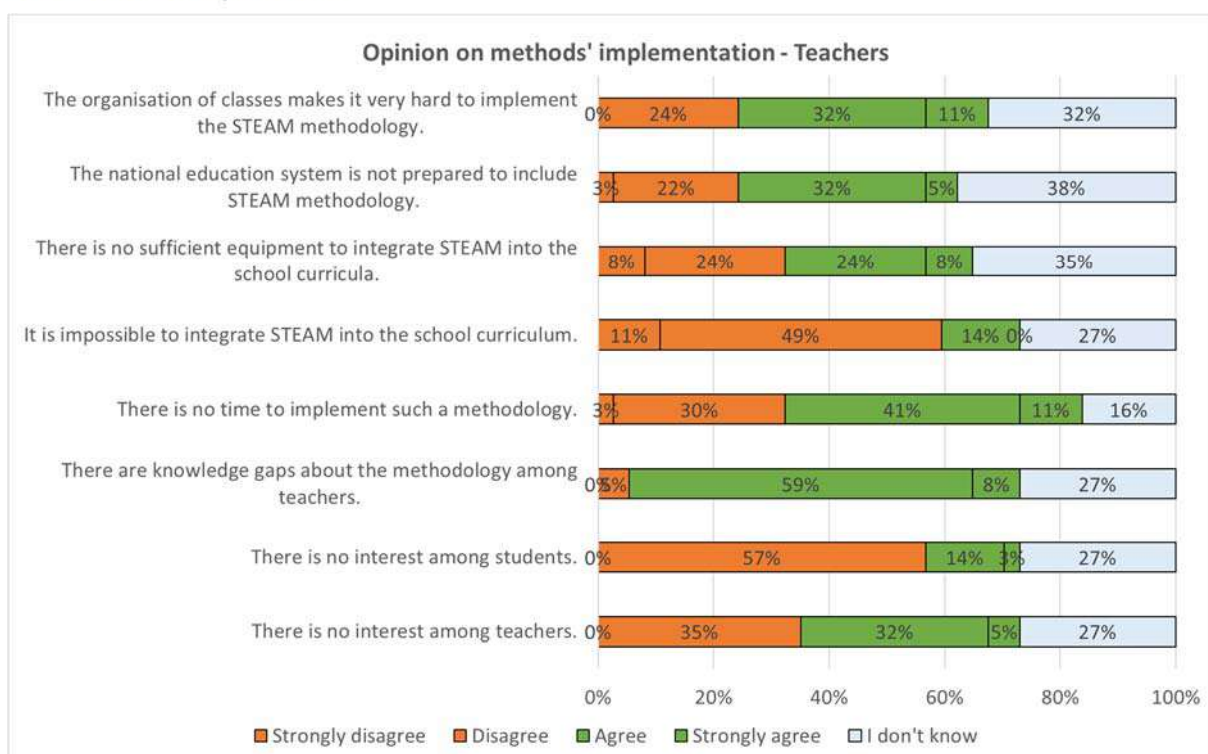
- Taken part in project-based teaching (76% not at all or a little)
- Well-prepared to implement the STEAM approach (73% not at all or a little)



Interests/attitudes

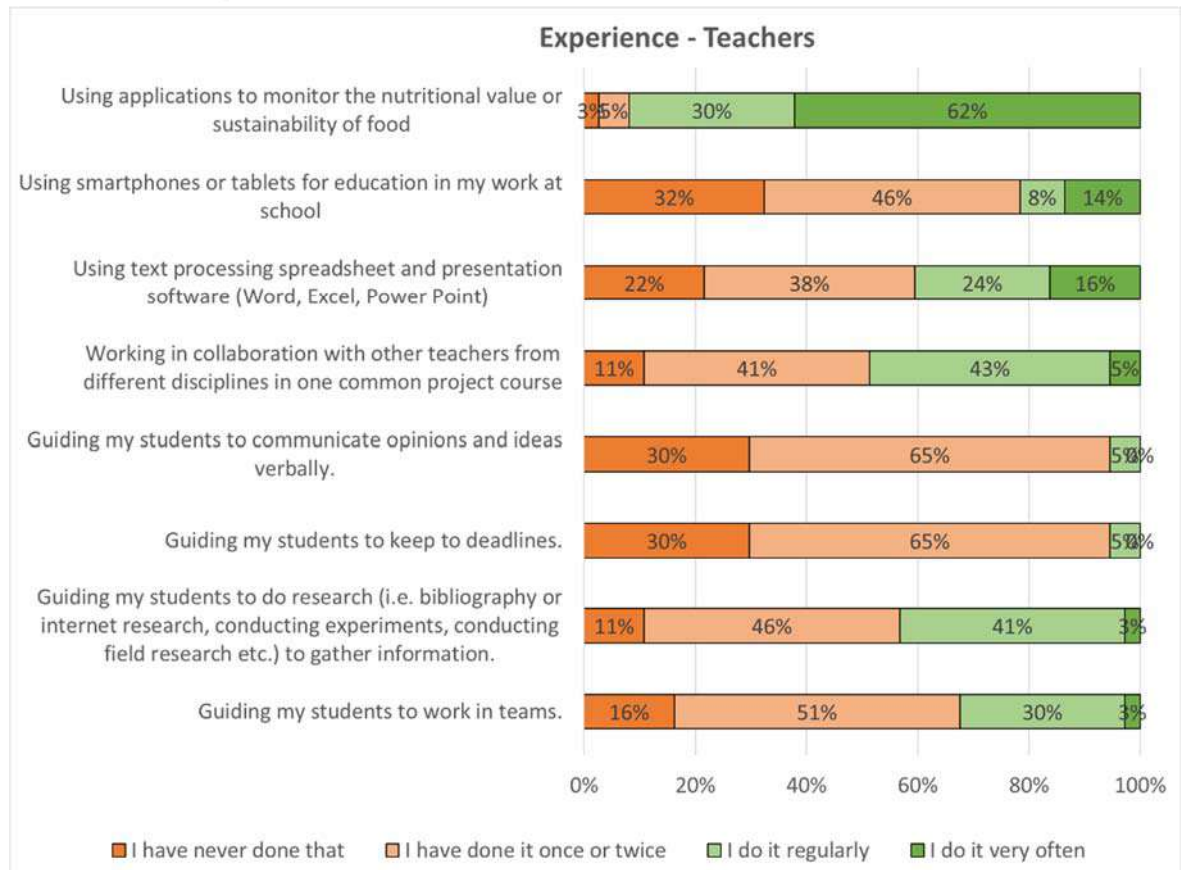
Teachers' opinion on methods' implementation

- There are knowledge gaps about the methodology among teachers. (67% teachers are agree)
- There is no time to implement such a methodology (52% teachers are agree)



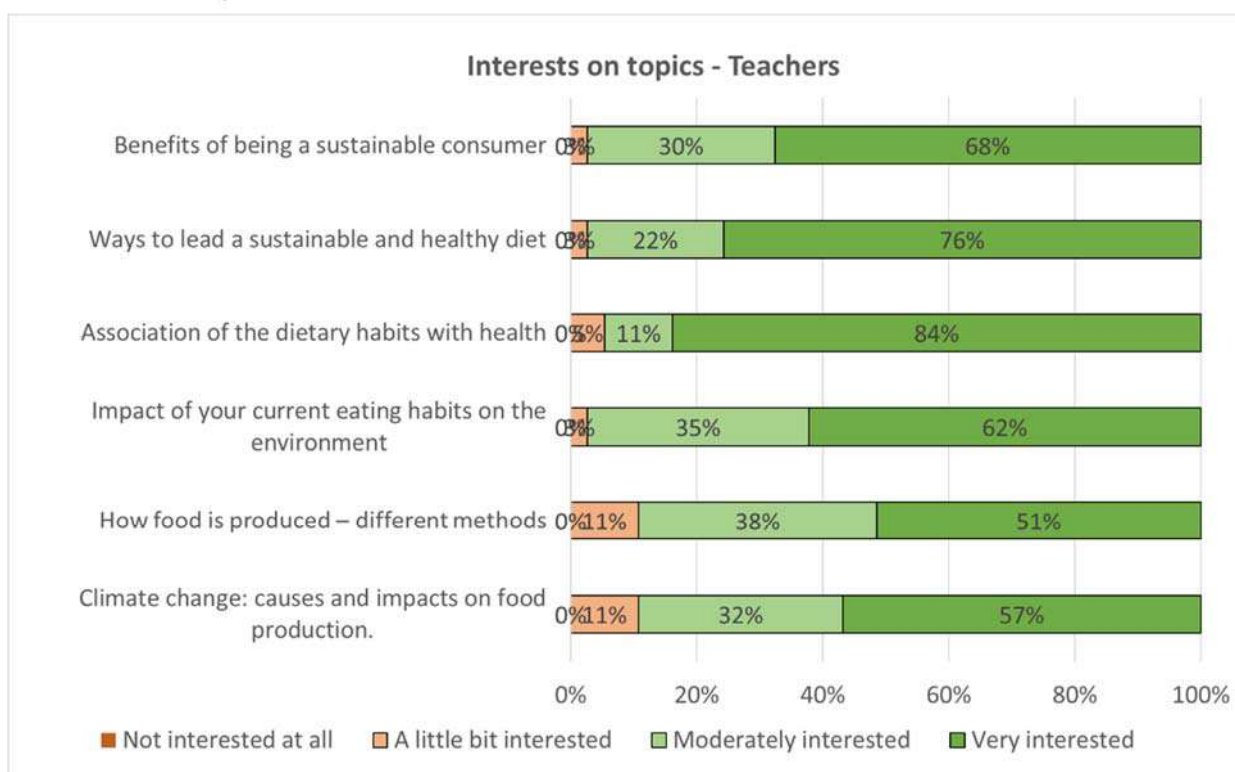
Teachers' experiences

- Guiding students to verbally communicate opinions and ideas. (95% have never done it or done it once or twice)
- Guiding students to keep to deadlines. (95% have never done it or done it once or twice)
- Guiding students to work in teams. (67% have never done it or done it once or twice)



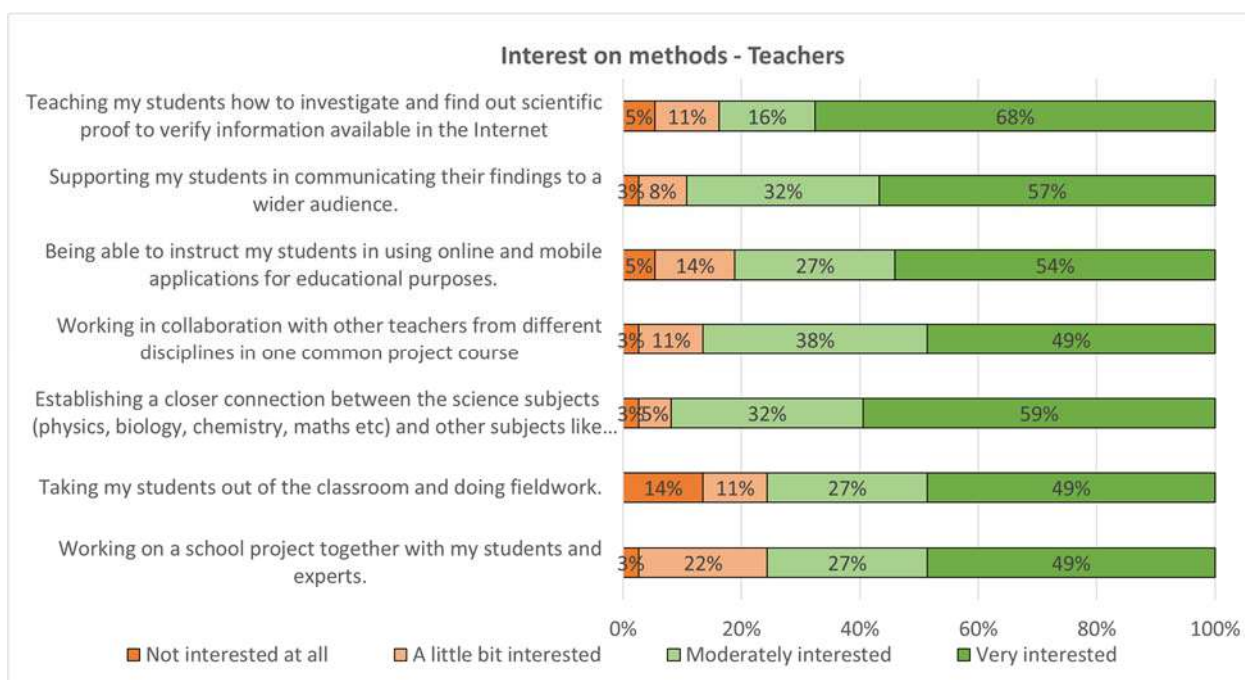
Interests on topics

- Benefits of being sustainable consumer (98% teachers are interested, among which 68% very interested)
- Association of the dietary habits with health (95% teachers are interested, among which 84% very interested)
- Impact of your current eating habits on the environment (97% teachers are interested, among which 62% very interested)



Interests on methods

- Establishing a closer connection between the science subjects. (91% teachers are interested, among which 59% very interested)
- Supporting my students in communicating their findings to a wider audience (89% teachers are interested, among which 57% very interested)
- Being able to instruct my students in using online and mobile applications for educational purposes. (79% teachers are interested, among which 54% very interested)



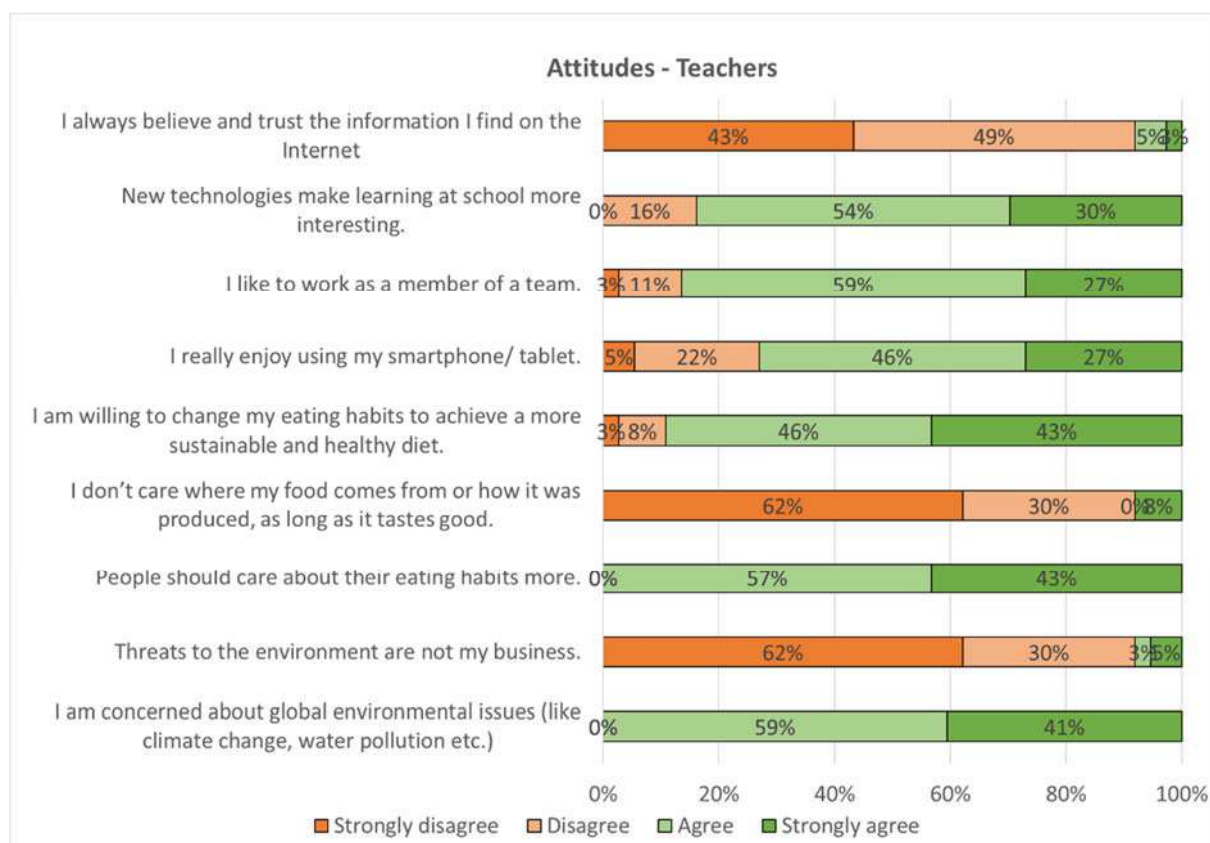


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Regarding their attitudes, teachers are very sensitive to ecological and environmental issues. They agreed with large majority on the following items: *I am concerned about global environmental issues* (like climate change, water pollution etc.) (selected by 100% teachers) and *People should care about their eating habits more* (100% total agreements)

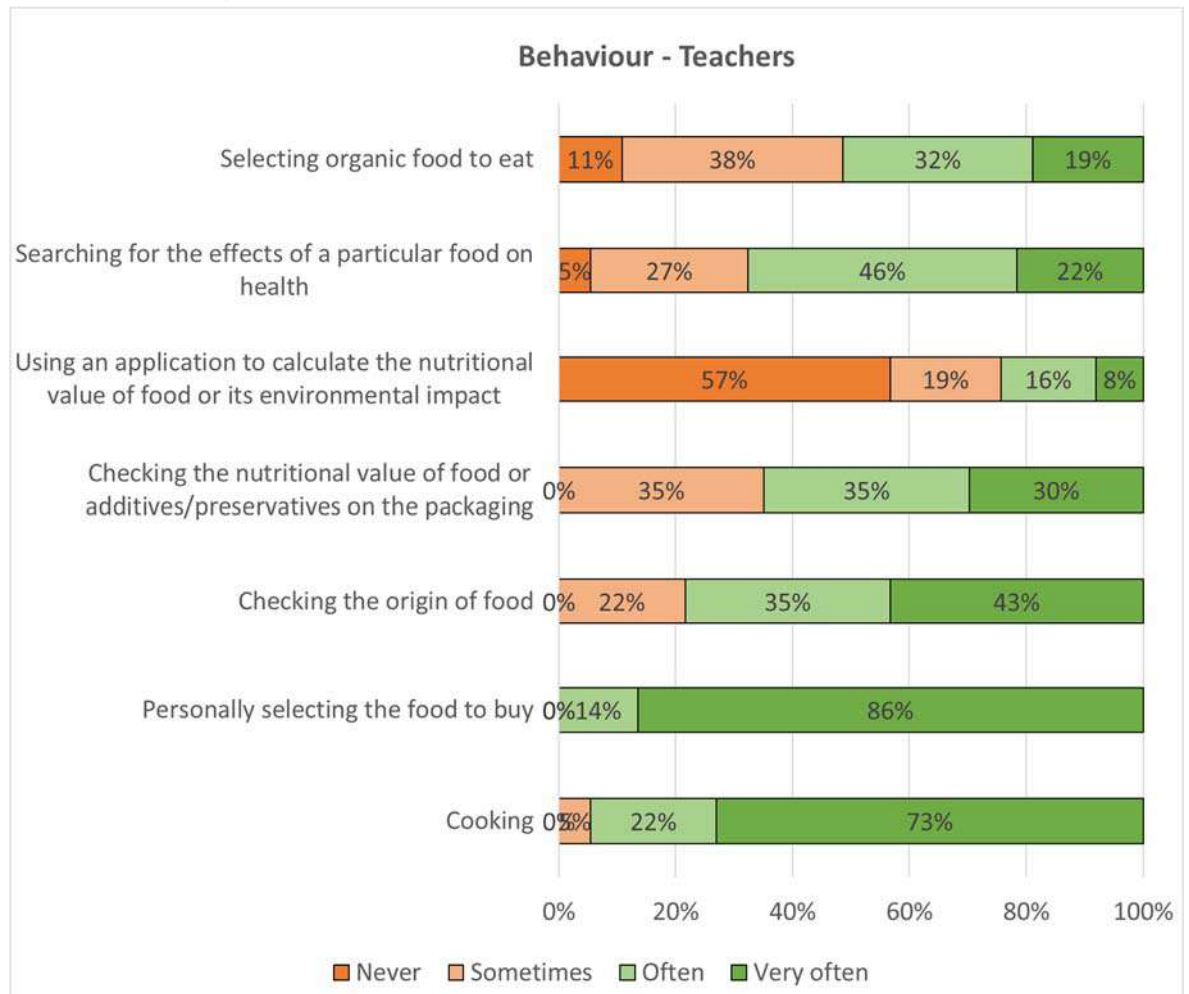
89% teachers are also willing to change eating habits to achieve a more sustainable and healthy diet.

Concerning the tools and methods to get knowledge, 73% enjoys using smartphones and tablets (among which 27% strongly agrees on that) and also the large majority agrees on the item *new technologies make learning at school more interesting* (84%) and on *I like to work as a member of a team* (86%).



They are engaged in doing home activities in relation to food. Around 30%-40% have never done activities such as selecting organic food, searching for the effects of specific food, checking the origin of the food or its nutritional value, and most of them (57%) have never used an application to calculate the nutritional value of food or its environmental impact.

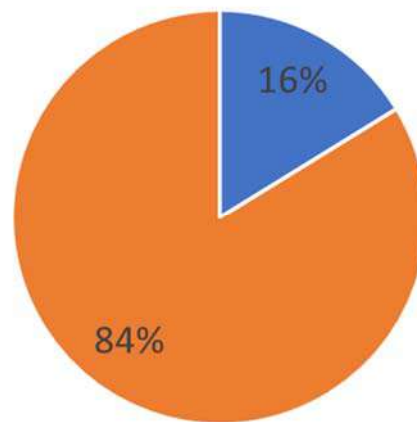
The activities that may have done to greater extent, are cooking and going for buying food.



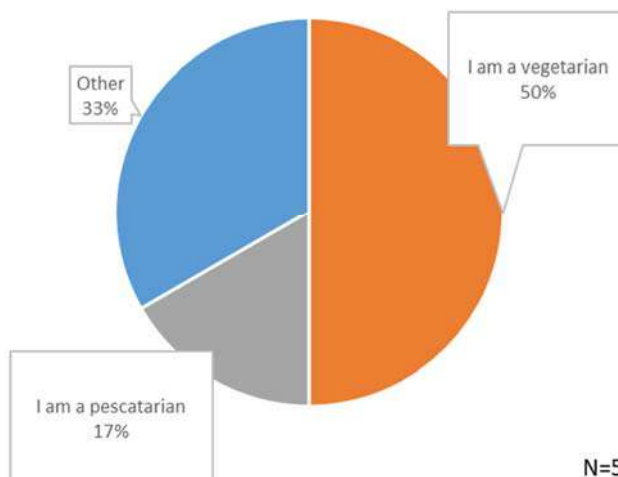
Most teachers do not follow a specific diet; only five of them are vegetarians or pescatarian.



Do you follow a specific diet?



■ Yes ■ No



Conclusion

The findings presented above draw a set of conclusions regarding the knowledge, skills, interests and attitudes of the participating students and teachers of the two high schools that are summarized below.



Students' peculiar results

Regarding the knowledge on Mediterranean diet, from the variety of foods given by the students, it seems that they associated it mostly to fruit and vegetables but also to what they use to eat at home.

Regarding what students mean for “healthy diet”, the results show that students are aware of the importance of a varied diet rich in fruit and vegetables, possibly with organic and unprocessed food, but also eating at regular intervals during the day. It also seems that they are aware that making diet selective choices does not necessarily mean healthy.

Regarding what students mean for “sustainable food production”, the majority of students connect it to the environmental impact of production, including several aspects like organic farming, reduced use of pesticides.

Regarding what students mean for “sustainable diet” they consider it as a diet with *healthy benefits, environmentally friendly* and with *high nutritional value*.

Students are familiar with

- Using online/mobile applications to assess the nutritional value of food (72% students do it, and 41% do it often).
- Using art to communicate ideas and notions (76% students do it, and 36% do it often).
- Using cameras or video-making (69% students do it, and 23% do it often).

Students are not familiar with

- Assessing information found in internet (56% have never done it or done it once or twice)
- Doing field work to gather information (51% have never done it or done it once or twice)
- Working in a team with other students (65% have never done it or done it once or twice)

Students are interested in

The following themes:

- Knowing about ways to lead a sustainable and healthy diet (74% students are interested, among which 37% very much interested).
- Knowing about the association of the dietary habits with health (69% students are interested, among which 32% very much interested).
- Also the other topic are potentially interesting, such as *how food is produced*, and the *impact of eating habits on the environment and climate change causes and impacts on food productions*.

And regarding the methodologies:

- Going out of the classroom and doing fieldwork (63% students are interested, among which 42% very interested)



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- Performing investigations and hands-on activities (65% students are interested, among which 38% very interested)
- Then, 53% are interested in working together with other students, discovering connections between school subjects and selecting the issue to focus on.

Regarding their attitudes, students are very sensitive to ecological and environmental issues.

- They are largely *concerned about global environmental issues* (like climate change, water pollution etc.)
- Think that *People should care about their eating habits more*
- *They are willing to change eating habits to achieve a more sustainable and healthy diet.*

Concerning the tools and methods to get knowledge, large majority

- *enjoys using smartphones and tablets*
- *agrees on the item New technologies make learning at school more interesting*
- *Likes working as a member of a team*

Most students feel comfortable in science, technology and maths.

Personal engagement:

- More in *cooking* and going for *buying food*.
- No use of Apps to calculate the nutritional value of food or its environmental impact

Teachers' peculiar results

Regarding the knowledge on Mediterranean diet, from the variety of foods given by the teachers, it seems that they associated it mostly to fruit and olive oil but also to what they use to eat at home.

Regarding what teachers mean for "healthy diet", the results show that students are aware of the importance of a varied diet rich in fruit and olive oil, possibly with organic and unprocessed food, but also eating at regular intervals during the day. It also seems that they are aware that making diet selective choices does not necessarily mean healthy.

Regarding what teachers mean for "sustainable food production", the majority of teachers connect it to the, the majority of teachers connect it to great extent to the low production of waste, little or no packaging, local production, to the minimal use of chemical pesticides and fertilizers, low environmental impact and to the sustainable income for producers. To lesser extent they also connect it to organic agriculture and low cost.

Regarding what teachers mean for "sustainable diet" they consider it as a diet with *healthy benefits, environmentally friendly* and with *high nutritional value*.

Teachers are familiar with

- STEAM skills are increasingly necessary to engage in a knowledge-based economy (79% teachers know, and 49% to an extent)
- Prepared for cooperation among them and project-based learning. (76% teachers know, and 35% to an extent).



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- Would like to take part in project-based teaching. (63% teachers do it, and 41% to an extent.)

Teachers are not familiar with

- Taken part in project-based teaching (76% not at all or a little)
- Well-prepared to implement the STEAM approach (73% not at all or a little)

Interests/attitudes

Teachers' opinion on methods' implementation

- There are knowledge gaps about the methodology among teachers. (67% teachers are agree)
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