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MSc in Palaeontology

WHAT FACTORS INFLUENCE YOUNG PEOPLE'S ATTITUDES TOWARDS PALAEONTOLOGY?

A COMPARATIVE ANALYSIS IN PORTUGAL AND IRELAND

MASTER IN PALAEONTOLOGY

NOVA University Lisbon
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I dedicate this thesis to my **husband** for his love and patience.

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"The best research you can do is talk to people."

Terry Pratchett

ABSTRACT

The study of fossils and ancient ecosystems has long fascinated young people. However, in Irish and Portuguese societies, there is still a lack of a comprehensive understanding of the factors that shape youth educational experiences, attitudes, and career aspirations in Earth Sciences, particularly Palaeontology.

This study offers insights into the factors influencing young people's attitudes towards Palaeontology in Portugal and Ireland, concluding by comparing the two countries' data. The focus will be on three life spheres: School, Home, and Broader Society.

The investigation will use a mixed-methods approach, using paper-based surveys, which will mainly provide quantitative data, and focus groups, which will allow qualitative data collection.

The data will be analysed using a meticulous univariate and bivariate statistical analysis.

The findings indicate that in Ireland, there is a notable deficiency in the understanding of Palaeontology, primarily attributed to its insufficient representation in the school curriculum compared to Portugal. However, in both countries, results show that a fondness for teachers, dynamic classes and the use of educational films or videos are the cornerstones for students to engage with and enjoy the topics of Earth Sciences. Additionally, students tend to seek information about fossils through online research platforms like Google and traditional methods like books and engage in activities such as watching films and documentaries to enrich their Paleontological knowledge. Furthermore, Portuguese and Irish students perceive Palaeontology as an interesting, complex and tedious career.

Keywords: Earth Sciences, Ireland, Perception, Portugal, Students.

RESUMO

A ciência que estuda fósseis e ecossistemas antigos tende a despertar um grande interesse nas crianças e jovens. No entanto, nas sociedades irlandesa e portuguesa, ainda subsiste uma falta de conhecimento nos fatores que moldam as experiências educacionais, atitudes e aspirações de carreira dos jovens nas Ciências da Terra, particularmente na Paleontologia.

O presente estudo tem como objetivo reconhecer e analisar os fatores que influenciam as atitudes dos jovens em relação à Paleontologia em Portugal e na Irlanda, concluindo com uma comparação dos dados dos dois países. O foco será em três esferas da vida: Escola, Casa e Sociedade em geral.

A investigação usará uma abordagem de métodos mistos, utilizando questionários em papel, que fornecerão maioritariamente dados quantitativos e grupos de foco permitindo a colheita de dados qualitativos.

Os dados serão analisados meticulosamente utilizando uma análise estatística univariável e bivariável.

Os resultados indicam que na Irlanda, há uma lacuna notável na compreensão da Paleontologia, atribuída principalmente à sua representação insuficiente no currículo escolar, em comparação com Portugal. No entanto, em ambos os países, as respostas mostram que uma afinidade com os professores, aulas dinâmicas e o uso de filmes ou vídeos educativos são fundamentais para que os estudantes se envolvam e apreciem os temas no âmbito das Ciências da Terra. Adicionalmente, os estudantes tendem a procurar informação sobre fósseis recorrendo a plataformas de pesquisa online como o Google e outros métodos tradicionais como os livros, além de participarem em atividades como assistir a filmes e documentários de forma a enriquecer o seu conhecimento paleontológico. Além disso, tanto os estudantes portugueses como os irlandeses vêem a Paleontologia como uma profissão interessante, complexa, porém tediosa.

Palavras-chave: Ciências da Terra, Estudantes, Irlanda, Perceção, Portugal.

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GLOSSARY

Engagement	Emotional involvement or commitment
Factors	A circumstance, fact, or influence that contributes to a result
Fossil	Remnant, impression, or trace of an organism of past geologic ages that has been preserved in the earth's crust
Influence	The capacity to affect the character, development, or behaviour of someone or something or the effect itself
Interest	A feeling that accompanies or causes special attention to something or someone
Palaeontology	The scientific study of the life of the geologic past, involves the analysis of plant and animal fossils, including those of microscopic size, preserved in rocks.
Youth	The period between childhood and adult age, according to the World Health Organization (WHO), refers to individuals between ages 10 and 24.
Adolescence	A phase of physical and psychological development that typically takes place between puberty and adulthood.

ACRONYMS

BEES	School of Biological, Earth and Environmental Sciences
BNS	Boys National School
DCT	Department of Earth Sciences
DES	Department of Education and Skills
DGE	Direção Geral da Educação
ETB	Education and Training Board
FCT	Faculty of Sciences and Technology
GNS	Girls National School
ICOM	International Council Of Museums
INE	Instituto Nacional de Estatística
NRC/IOM	National Research Council and Institute of Medicine
NS	National School
SN	Scoil Naisiúnta
SREC	Social Research Ethical Committee
STEM	Science, Technology, Engineering and Mathematics
UCC	University College Cork
WHO	World Health Organization

SYMBOLS

n= Number of students

1. INTRODUCTION

Science is the gateway to understanding the world, and the enticing journey begins in childhood.

This thesis delves into what influences young audiences daily and how Palaeontology emerges as a pivotal character in this narrative.

The tools to introduce young people to Science have become more original and innovative, from interactive museum exhibits to engaging classroom activities and captivating television programmes. Among these innovative approaches lies the discipline of Palaeontology, a scientific endeavour that transports curious young minds to a time when prehistoric mysteries awaited discovery.

Palaeontology encompasses art, science, and imagination, serving as a source of immense curiosity for students about ancient life. It also illuminates our origins and the evolutionary journey that has led to the world as we know it. Among all the Sciences, Palaeontology can provide young people ample opportunities to engage and immerse themselves in learning Science (Stucky, 1996).

The ultimate goal of this study is to understand the factors that contribute to fostering an interest in Palaeontology among students in the Junior Cycle in Ireland and the 3rd Cycle of Basic Education in Portugal.

The selection of this particular sample group was based on the easy access to students during this cycle, allowing a more thorough research and data collection and the ease of questioning and subject exploration due to knowledge already attained at this particular age and school year.

The research will focus on three significant aspects of the students' lives, referred to in this thesis as "Life Spheres": School, Home, and Broader Society.

The School Life Sphere centres on the school setting and includes curriculum, teachers, field trips, and visits to the school by professionals in Earth Sciences. The Home Life Sphere will highlight the domestic environment, covering parental and siblings' interests, parental occupation and education, hobbies, family interactions and discussion about scientific topics. The Broader Society Life Sphere investigates factors beyond the immediate school and home environments, including access to scientific museums, use of traditional media, video games, social media, public artworks, and careers in Science.

Surveys and focus groups were selected as data collection methodologies. The surveys generated mostly quantitative data, which was complemented by the qualitative data collected from the focus groups. Both methodologies focused on the three Life Spheres mentioned above.

This study gathers data from Ireland and Portugal, allowing a comparative analysis between the two countries to determine which factors have a bigger influence on students while also providing a view of cultural and societal values in Palaeontology.

The research will focus initially on a literary review used to understand some factors that influence students' and particularly adolescents' lives. According to the World Health Organization (WHO, 2024), adolescence is a stage of life between childhood and adulthood, typically ranging from ages ten to 19.

Literature reviews are crucial as they compel the writer to gather extensive information on the chosen topic, disclose his/her understanding of such topic, and reveal gaps and weaknesses in prior research, helping to justify and shape the need for further investigation (Berg, 2009 in Denney & Tewksbury, 2012).

Subsequently, the research methodologies will be implemented on the school premises during class hours. Finally, the analysed data will be presented, incorporating a comparison between countries, discussion and conclusions.

The outcomes of research like the one conducted for this thesis will permit pinpointing the contributing factors shaping young people's attitudes towards Palaeontology. These findings aim to offer valuable insights that will enable a strategic focus on upcoming public engagement initiatives, optimising their effectiveness to exploit the outreach and influence of endeavours aimed at improving the educational pathway for this field.

1.1. Data acquisition logistics

This subchapter will focus on the steps that were necessary to conduct a thorough investigation and collect data in Portuguese and Irish schools.

In Portugal, in order to collect data in schools, authorisation was required from the Direção Geral de Educação (DGE) via their online platform and designated section "Monotorização de Inquéritos em Meio Escolar: Registo de entidade". The submission necessitated the provision of comprehensive documentation related to the data collection process. This included a formal letter elucidating the methodologies employed in the study, a declaration addressed to parents/guardians and students informing them of the methodologies and soliciting consent for data processing and recording of the focus groups, documentation outlining the advisor's commitment to assisting and guiding the master student throughout the data collection process and finally, the surveys and questions utilised in the focus groups' sessions.

The DGE's approval took approximately one week. Following its permission and subsequent incorporation of the entity's recommendations, the next step was to initiate communication with the schools.

The initial correspondence was established via electronic mail directed to the principals of the Portuguese schools, delineating a comprehensive outline of the study. Accompanying the emails were formal letters addressed to teachers, parents/guardians, and the methodologies. Once the methods were accepted by the school's pedagogical board, arrangements were made to facilitate the data collection process.

In Ireland, approval from the Social Research Ethical Committee (SREC) of the University College Cork (UCC) was initially considered necessary. A comprehensive 31-page document comprising essential details pertinent to the thesis endeavour was required. The initial segment encompassed a 10-page form necessitating signatures by both the student and the co-advisor. This document was mandated to encapsulate a meticulous exposition of the thesis particulars, delineating the methodologies, time and space parameters of data collection and compressive ethical considerations. Once completed and signed, the document was to be submitted to SREC, with an anticipated review timeline ranging between 8 to 10 weeks.

After submitting the document, it was revealed that approval from the School of Biological, Earth, and Environmental Sciences (BEES) was the only requirement.

In addition to this prerequisite, Garda vetting procedures were initiated, considering the involvement of minors in the study. Furthermore, arrangements for insurance coverage, facilitated by NOVA University, were necessary to ensure access to the school premises.

Upon receiving approval from the BEES department to commence the data collection, granted four weeks before the culmination of the academic year, logistical constraints necessitated collaboration with only a limited number of schools. This selective approach enabled only engagement with students who were more accessible and available at the time, mostly first and second-year students.

The first contact was made through e-mail to the Junior cycle years head. A detailed formal letter directed towards teachers, parents/guardians, and students, elucidating the nature of the study and soliciting their participation, was attached to the e-mails. Each methodology was accompanied by a required consent form for students and their parents/guardians.

Once receiving approval from the principal and obtaining consent from both students and parents/guardians, data collection began in Irish schools during the final week of the school year. As a result, the sample size of Irish students was relatively smaller than that of the Portuguese sample.

2. FACTORS INFLUENCING YOUNG PEOPLE'S ATTITUDES

In a world teeming with stimuli, comprehending the influences shaping the attitudes and perspectives of children and young adults, particularly in Palaeontology, is difficult but crucial. To delve into this, the dissertation will scrutinise three distinct "Life Spheres" of young people's lives: School, Home, and Broader Society.

The initial chapter will centre on the significance of school, a pivotal aspect of students' lives. Subsequently, the discussion will shift to Home and family dynamics. Lastly, Broader Society will be dissected, focusing on the impact of technology and media, the important role of museums in education, and the aspirations of careers in Science for upcoming generations.

2.1 Educational Influence: Schools

Adolescents devote a significant portion of their time to school, second only to their time spent in bed. It is the environment where they encounter their culture's wealth of knowledge, socialise with friends, participate in identity-shaping extracurricular activities, and prepare for their future. As a result, school experiences have a persuasive impact on every aspect of adolescents' development, influencing the extent and depth of their intellectual capacities, their psychological well-being and the nature of peer influences on their growth (Wigfield et al., 2006 in Eccles & Roeser; 2011).

Early adolescence is characterised by numerous shifts in biological and psychological traits and alterations in relationships with peers, teachers and school counsellors. Moving from elementary to middle school challenges young individuals, particularly those grappling with life changes (Wigfield et al., 2005). According to Wigfield et al. (2005), a study by Akos and Galassi (2004) examined students' perceptions of the transition from elementary to middle school. They discovered that the key concerns of students undergoing this transition revolved around the anticipated homework, expectations, rules, and responsibilities in the new environment.

Furthermore, individual characteristics such as gender, academic performance, and self-concept, as well as family background factors like socioeconomic status and parental support, have been demonstrated to uniquely predict various aspects of student engagement, including behavioural compliance, school participation, valuing, identification, and attendance ([De Wit et al., 2010; Veenstra et al., 2010; Wang & Eccles, 2012; You & Sharkey, 2009] in Quin et al., 2018).

Within the school setting, it is suggested that teachers and their support to students play a crucial role in ensuring a positive alignment between the student and the school ([Eccles et al., 1993; Deci, 2009] in Quin et al., 2018). Undoubtedly, the significance of a teacher's instructional and emotional support in shaping student academic learning is firmly established ([Hattie, 2009; Slater et al., 2012; Kyriakides et al., 2013] in Quin et al., 2018). Additionally, teacher support, manifested through high-quality teacher-student relationships, has been found to correlate with behavioural engagement indicators like student participation and work habits, cognitive engagement indicators such as commitment, and emotional engagement, including a positive attitude towards school (Quin, 2016 in Quin et al., 2018).

The reason teachers are so important in student's lives is that, with their professional qualifications, teachers identify beliefs, pedagogical skills, and curricular choices, representing some of the most immediate influences on the development of adolescents in school (Pianta & Hamre, 2009 in Eccles & Roeser, 2011).

According to the authors cited above, a restrictive aspect of teachers' beliefs is the goals forming the foundation of various teaching practices. When teachers believe intelligence is a fixed entity rather than a modifiable skill, they are inclined to employ pedagogical strategies more centred around innate abilities. Likewise, students who perceive intelligence as a fixed entity will likely adopt a relative ability-focused approach to learning. While this orientation may not pose issues for students excelling academically, it will likely undermine those who struggle, negatively impacting their learning and overall school engagement.

The current correlations emphasise that student's perceptions of the support provided by their teachers play a vital role not only in their academic grades but also in several crucial indicators of engagement ([Veenstra et al., 2010; Slater et al., 2012; Wang & Eccles, 2012; Conner & Pope, 2013; Quin, 2016] in Quin et al., 2018).

However, teachers are not the only ones adolescents seek for advice or who influence their attitudes; their perceptions are similar to those of their peers and friends (Berndt & Keefe, 1995).

Young individuals frequently choose friends who are similar to themselves. For instance, adolescents with comparable grades are frequently placed in the same class and often form friendships with one another. In a study by Berndt and Keefe (1995), many correlations pointing towards similarity in adjustment among friends were observed. These correlations imply that the adjustments of adolescents are influenced by their friends, as mutual impact tends to make them more alike.

The enjoyment students derive from school is also significantly influenced by the school curriculum established by an authoritative educational organisation, often associated with the government.

The type of academic tasks assigned to students can significantly impact their knowledge, attention, interests, passion, and ethical values. Two crucial aspects of academic work for adolescents' development are the intellectual substance and global social-historical considerations in the curriculum and the instructional design aimed at fostering interest, meaningfulness, and challenge, leading to deep cognitive, emotional, and behavioural engagement with the material (Fredricks et al., 2004 in Eccles & Roeser, 2011).

These characteristics vary in their alignment with the development needs of students of different ages, cultures, and social backgrounds. Both cross-sectional and longitudinal

correlational evidence support the idea that academic work tailored to the developmental interests and cultural realities of adolescents promotes motivation to learn and fosters a strong connection between young people and school institutions ([Roeser et al., 2000; Burchinal et al., 2008] in Eccles & Roeser; 2011). Conversely, experiences of boredom, low interest, and perceived irrelevance of the curriculum predict reduced engagement, learning, and a tendency to withdraw from school ([National Research Council and Institute of Medicine (NRC/IOM), 2004; Finn, 2006] in Eccles & Roeser; 2011).

The manner of instruction also plays a crucial role in influencing adolescents' motivation, engagement, and learning ([Deci & Ryan, 2002; Fredricks et al., 2004; Hattie, 2009] in Eccles & Roeser, 2011). Optimal choices involve selecting materials that match the appropriate challenge level for a given class, creating learning activities that involve diverse cognitive operations, such as foreign opinions, following routines, memory, and comprehension, organised lessons in a systematic progression, utilising multiple representations of a problem, and explicitly teaching strategies that aid in learning. These design features provide scaffolding for learning, promoting interest, engagement, and learning (Eccles & Roeser, 2011).

Participating in constructive, well-organised activities and service-learning environments benefits adolescents for several reasons. One engages in positive activities and occupies their time, reducing opportunities for involvement in risky behaviour. They can acquire valuable skills, prosocial values, and attitudes through involvement in constructive and service-learning activities, and being part of organised activities and service-learning settings enhances the likelihood of building positive social support networks and fostering prosocial values ([Mahoney et al., 2005; Larson et al., 2006] in Eccles & Roeser, 2011).

Beyond being recognised as important and consuming considerable time in our adolescents' lives, school life is directly connected to their perception of well-being (Matos & Carvalho, 2001).

This chapter emphasises schools' pivotal role in students' daily lives. Beyond mere educational institutions, schools function as dynamic entities shaped by a community wherein family, teachers, counsellors, friends, pedagogical board and guests continuously impact students' perceptions and attitudes.

Notably, the curriculum emerges as having a significant part where the manner of teaching, workload, evaluation methods, and expected skills contribute to shaping students' preferences. The subsequent section will delve into the Junior Cycle and 3rd Cycle curriculums in Irish and Portuguese schools, respectively, and shed light on how mandatory education is implemented in both countries.

2.1.1 Ireland

Education forms the cornerstone of a nation's scientific advancement, and Irish schools are essential in nurturing young minds with a passion for science and critical and scientific thinking.

Science communication is a vital link between science practitioners and education. It is a dynamic process that fosters dialogue among scientists, teachers, and learners within an environment characterised by mutual respect and a shared language of discourse (Stocklmayer,

2001 in Strauss et al., 2005). These dialogues extend to the interaction between the realms of science and non-science. A duality is evident in the divide between those engaged in scientific practice and those tasked with teaching science, particularly in the classroom (Strauss et al., 2005).

According to the same author, the teacher's role in the classroom is to establish a guided inquiry zone, guiding students towards a more profound comprehension within the framework of scientific exploration.

In Irish schools, scientific learning is mirrored in their curriculum.

In order to understand what impact schools have on youth attitudes, it is crucial to comprehend the role of Irish schools in their lives and how and what Ireland is doing with the Education System. This section will provide a quick overview of the Irish schools.

In Ireland, the school year runs for 164 days, and the education system comprises primary school and post-primary school, commonly referred to as secondary school. Children must receive a minimum level of education from age six until they reach 16 years old or have finished three years of post-primary education. This ensures that every child has access to and completes a fundamental educational period within a specific age range (*Citizens Information*, 2022).

As per *Citizens Information* (2024), in Ireland, the commencement of the school year varies between institutions. Each school has the authority to determine its start and end dates within the academic year. Typically, the school year begins during the week when the first of September falls.

Post-primary schools typically conclude their academic year prior to the June bank holiday (the first Monday in June) to accommodate the start of the exams. Conversely, primary schools generally remain in session until the last week of June.

There are four mandated school breaks throughout the year: the autumn mid-term break, Christmas break, the February mid-term break, Easter break and Summer break.

According to *Citizens Information* (2022), children usually start primary school when they are five years of age.

Two types of primary schools are available in Ireland: Private and National, usually called national schools due to State funding. The majority of children in Ireland go to National primary schools.

Numerous national primary schools are under various religious institutions' ownership and/or backing.

These institutions often use the initial letter of NS (National School), GNS (Girls National School), BNS (Boys National School), and SN (Scoil Naisiúnta) with the school's name to describe them as a national school.

Privately owned schools can choose the curriculum, school days, and school year. In practice, many private schools offer a curriculum similar to that outlined by the national schools, even though they are not obliged to do so.

As in primary school, most post-primary schools are funded by the state, and children usually start post-primary school free of charge at the age of twelve or thirteen.

According to *Citizens Information* (2023), there are three types of post-primary or secondary schools in Ireland: voluntary secondary schools, Community colleges, and Community schools.

Voluntary secondary schools typically represent privately operated and overseen post-primary educational institutions. They are commonly affiliated with a singular entity, such as a religious community, a charitable trust, or a private organisation, serving as their patron.

Community colleges are established by the local Education and Training Boards (ETB). This board serves as the exclusive patron of these educational institutions.

Finally, the Community schools are formed through collaboration between one or multiple private or religious patrons alongside an ETB patron or through the merger of voluntary secondary schools and ETB institutions.

Each school type has a distinct ownership and administration. Governing boards of schools are mandated to incorporate representatives from parents and teachers. Historically, the type of school usually determines whether the focus is towards academic or vocational achievements. Even so, these schools must follow the curriculum the Minister of Education sets.

2.1.1.1 Junior Cycle

As mentioned in the introduction, this dissertation will concentrate on Junior Cycle pupils, chosen for data collection due to the convenient access to students enabled by the more adaptable curriculum compared to older cycles. Therefore, a brief overlook of the Junior Cycle school curriculum will follow.

According to *curriculum online* (2024), the Junior cycle is designed to accommodate students during the initial three years of their post-primary education, usually between the ages of twelve to fifteen.

For students, the curriculum in the Junior Cycle comprises a combination of subjects, short courses, and various other examinations. After their three-year Junior Cycle, culminating in attaining a Junior Cycle Profile of Achievement.

As per the Department of Education and Skills (DES, 2015), throughout this educational phase, the focus is on placing students at the heart of the learning experience, encouraging active participation in their communities and society. Allowing children to prioritise the calibre of educational experiences carefully designed to maintain a high standard directly enhances learners' physical, mental, and social well-being. The aim is to provide engaging and enjoyable encounters and equip them with the skills and confidence needed to be adaptable and self-assured learners across all facets and phases of their lives.

The Junior Cycle curriculum is a continuation of the prior learning, actively fostering their progression in knowledge and aiding in developing the essential learning skills crucial for navigating life beyond the school environment.

The Junior Cycle curriculum emphasises eight key skills:

- Being literate
- Managing myself
- Staying well

- Managing information and thinking
- Being numerate
- Being creative
- Working with others
- Communication

Figure 2.1 below represents the eight key skills and the main goals for each one of them.



Figure 2.1 Key skills and their elements in Junior Cycle (DES, 2015).

In the Junior Cycle, students have several subjects to study in the programme. The range of the subjects offered varies per school, depending on the teaching resources and the needs and interests of the students.

As stated in *Citizens Information* (2023), every Junior Cycle student must study Irish (unless exempt), English, Mathematics, and History. Certain schools may mandate additional subjects based on their policies.

Additionally, students can opt for a maximum of ten subjects. The subjects vary from Applied Technology, Business studies, Classics, Engineering, English, Gaelic, Geography, Graphics, History, Home Economics, Jewish studies, Mathematics, Modern Foreign languages (which includes French, Italian, Spanish and German), Music, Religious Education, Science, Visual Art and Wood Technology (Figure 2.2).

AT Applied Technology	BS Business Studies	CL Classics	En Engineering	E English	Gae Gaeilge
Geo Geography	GR Graphics	His History	HE Home Economics	JS Jewish Studies	M Mathematics
MFL Modern Foreign Languages	Mu Music	RE Religious Education	Sci Science	VA Visual Art	WT Wood Technology

Figure 2.2 Subjects offered to the Junior Cycle programme (available in curriculum online, 2024).

In addition to the previously mentioned subjects, students are also permitted to enrol in various short courses. The list of available courses, consistent with *curriculum online* (2024), is as follows:

- Coding
- Civic, Social and Political Education
- Physical Education
- Digital Media Literacy
- A Personal Project: Caring for Animals (Level 2)
- Social, Personal and Health Education
- Artistic Performance
- CSI: Exploring Forensic Science (Level 2)
- Chinese Language and Culture
- Philosophy

To summarise, school is a big part of children's and the youth's education, shaping their attitudes towards the world around them through subjects, teachers, classmates, field trips, programs with the local community, colleges and other schools.

Although subjects such as Science and Geography, the latter encompassing Earth Sciences, are not obligatory in the Junior Cycle program, numerous schools in the country designate them as core subjects, rendering them compulsory.

The data collection will target students enrolled in Geography and/or Science subjects within the Junior Cycle curricula. This selection is based on the premise that these students engage with subjects possessing seamless applicability to Palaeontology. Understanding the impact of academic exposure on attitudes towards the Earth Sciences becomes more discernible when focusing on students already immersed in relevant topics.

Consequently, the ensuing sections will examine the curricula of these specific subjects in detail.

2.1.1.1.1 Science

The following information was accessed through documents available in *curriculum online*, (2024), where the specifications of each subject are available. The document, officially dated from 2015 and titled Junior Cycle Science, Curriculum Specification, was produced through a collaboration between the National Council for Curriculum and Assessment, the Department of Education and Skills and the Government of Ireland.

Engaging in Science during the Junior Cycle allows students to expand upon their primary science education and apply their innate understanding to generate, explore, and refine solutions for various problems.

The main goal of the subject of Science is to enhance students' evidence-based comprehension of the natural world and their capacity to collect and assess evidence. This aims to strengthen and advance their scientific working skills, foster self-awareness and instil confidence in their ability to apply scientific knowledge in their daily lives.

The Junior Cycle science specification supports students' understanding and knowledge of science through the cohesive Strand, the Nature of Science, and the four contextual strands: Physical World, Chemical World, Biological World, and Earth and Space. This specification is designed for at least 200 hours of timetabled student engagement spanning the three years of the Cycle.

The universal Strand Nature of Science is divided into four smaller strands (Figure 2.3). The elements of this unifying strand focus on how science works, including carrying out investigations and science communication. The learning outcomes are pursued through the contextual strands as students develop their knowledge of science through scientific inquiry.

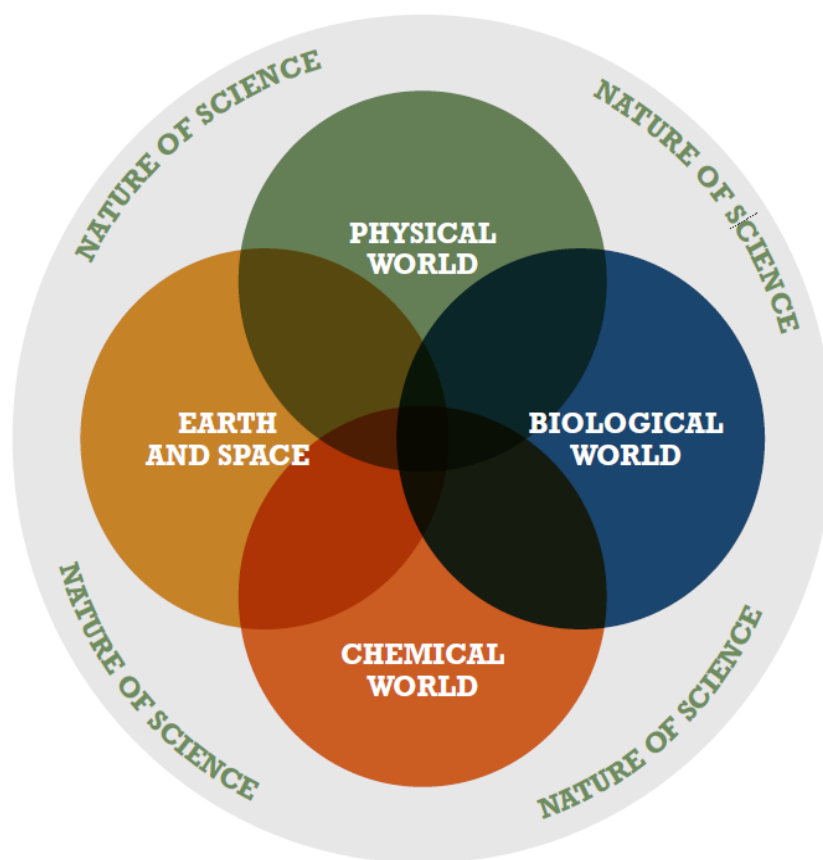


Figure 2.3 Science curriculum strands for Junior cycle (The National Council for Curriculum and Assessment, Department of Education & Skills and Government of Ireland, 2015).

In strand Earth and Space, an optimal environment is created to formulate general principles and overarching concepts. This process aids in cultivating an understanding of the universe's structure and fundamental organising principles in astronomy. Students investigate the interconnections between diverse celestial entities and examine evidence regarding the universe's historical evolution.

By utilising data, students identify patterns in the movements of the Sun, Moon and stars, constructing models to elucidate and foresee occurrences like day and night, seasons, and lunar phases. The cyclical processes involving matter, exemplified by carbon and water cycles, present a comprehensive framework for students to grasp various physical and chemical processes. They encompass energy conservation, energy resources, weather and climate, and the fundamental concept of cyclical systems. Through this, students gain insights into the repercussions of human activities on Earth and delve into understanding the role and implications of human space exploration.

The Chemical World strand revolves around the examination of matter and its formation. Students will cultivate an understanding of matter's composition and characteristics, the alterations it undergoes, and the energy implicated in these changes. They will become proficient in interpreting their observations by considering the properties and behaviour of atoms, molecules, and ions. Additionally, students will acquire the skills to articulate their comprehension using visual representations and the symbols and conventions of chemistry.

Within this strand, students will also gain insights into evaluating the resources employed in the entire material life cycle, encompassing extraction, usage, disposal, and recycling. Equipped with this knowledge, students will be better prepared to comprehend science-related challenges, such as environmental sustainability and the innovation of new materials and energy sources.

The Physical World involves the exploration of physical observables. Through well-suited experiments, students comprehend fundamental principles like length, time, mass, and temperature. This dual process enables them to grasp scaling and proportional reasoning, appreciate the necessity for standardised units, and choose and utilise fitting measurement instruments. By delving into concepts like area, density, current, and energy, students enhance their capacity to recognise and measure various physical properties. Through experimentation, they explore patterns and correlations between these properties. Additionally, students engage in the design and construction of uncomplicated electronic circuits.

Moreover, students develop an understanding of the concept of energy, comprehending how it transforms different forms without loss. They also delve into sustainability issues linked with modern physics and technologies, analysing our production and consumption of electricity.

The Biological World strand guides learners in comprehending the dynamics of living organisms and their interaction with their surroundings. Students are introduced to the cell as the fundamental unit of life, understanding how traits are passed down from generation to generation. They cultivate an awareness of life's extensive variety, life processes, and the evolutionary journey. The exploration extends to body systems and their interconnectedness. Students investigate living organisms, their interdependence and interactions within ecosystems. They also delve into pertinent societal issues, such as the impact of human activities on the natural world. In this strand, students are introduced to the concepts of genetics, evolution by natural selection and how it explains the world's diversity.

Though the learning outcomes for each strand are delineated distinctly, it's important to stress that the strands are not intended to be studied in isolation. To underscore the integrated approach to science learning, the outcomes for each contextual strand are organised based on four key elements: Building block, Systems and Interactions, Energy and Sustainability, as shown in Figure 2.4.

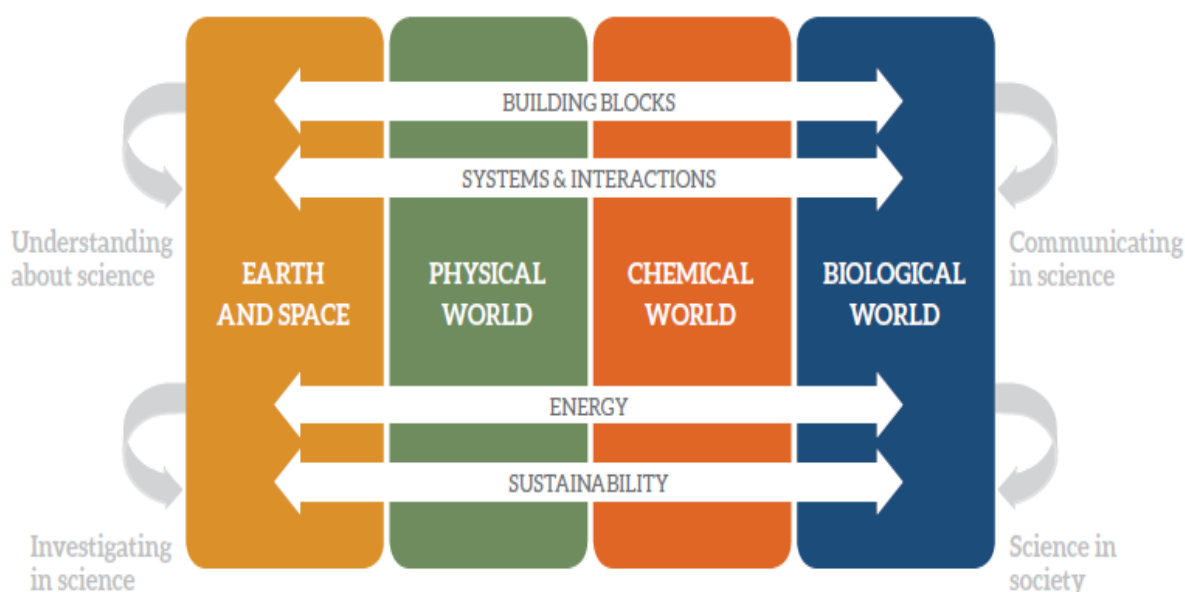


Figure 2.4 Contextual and unifying strand elements (The National Council for Curriculum and Assessment, Department of Education & Skills and Government of Ireland, 2015).

There is also a focus on contemporary issues in science in the classroom. It is common for scientists to disagree, and with the help of technology, these disagreements are more often spilt into the public domain, sparking discussions. This specification empowers educators to create platforms for students to explore current scientific debates, encouraging them to link science with other disciplines and daily encounters.

This way, students can interact with contemporary scientific challenges that impact everyday life. They will acquire the ability to comprehend, interpret, and analyse data, an invaluable skill applicable well beyond science.

2.1.1.1.2 Geography

The following information was accessed through documents available in *curriculum online* (2024), where the specifications of each subject are available and were introduced to schools in September 2018. The document, officially dated from 2017 and titled Junior Cycle Geography, Curriculum Specification was produced through a collaboration between The National Council for Curriculum and Assessment, the Department of Education and Skills and the Government of Ireland.

Geography studies Earth's landscapes, people, places and environments. This subject adheres strictly to the scientific method, embodying scientific principles and logical reasoning. Studying geography empowers students to become geographically literate. It cultivates the skills to interpret the environment, enabling deciphering the physical landscape, observing climate occurrences with a discerning eye, and discussing global events with a well-informed perspective.

Geography-based learning assists students in making well-informed choices, granting them the capacity to contribute value to the economic, social, and cultural dimensions of their communities, local regions, and nations. The topics explored in this subject contribute

to broadening students' awareness and comprehension of cultural diversities and promoting respect for differences.

The specification for Junior Cycle Geography is achieved through three interconnected strands (Figure 2.5). Exploring the Physical World, Exploring how we interact with the physical world and Exploring people, place and change. These three strands englobe a foundational concept entitled Geoliteracy.

This subject has been designed for at least 200 hours of timetable student engagement across the three Junior Cycle years.

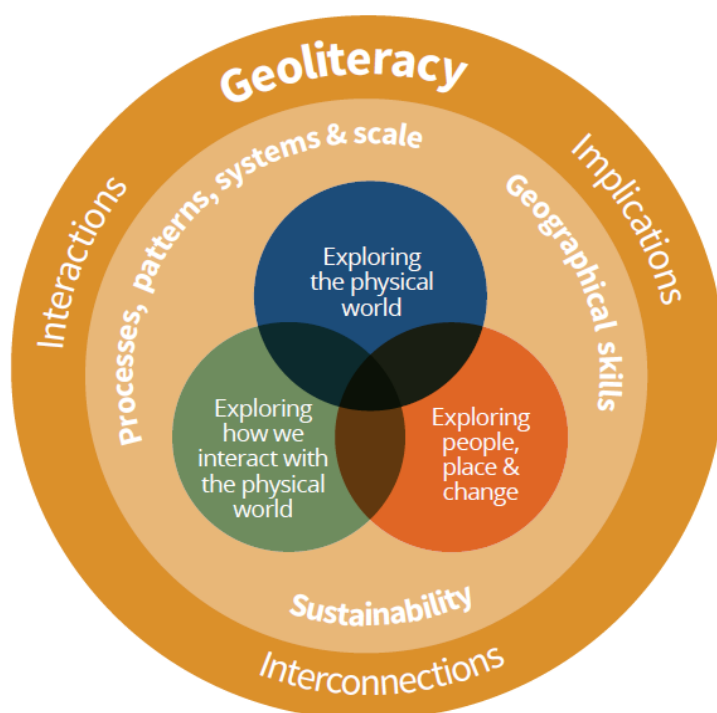


Figure 2.5 Geography curriculum strands studied during Junior Cycle (The National Council for Curriculum and Assessment, Department of Education & Skills and Government of Ireland, 2018).

Geoliteracy refers to the student's ability to formulate comprehensive decisions using geographical thinking and reasoning. It serves as the foundational structure for understanding geography, seamlessly woven into the learning and teaching of the subject.

The three core components of Geoliteracy are Interactions, Interconnections and Implications. Interaction refers to how systems, encompassing human and natural aspects, engage with one another. Interconnections involve the associations between individuals, locations, surroundings, and spatial arrangements. Implications signify an individual's capacity to comprehend the repercussions of their decision-making and that of others. This last component helps students to see subjects more holistically.

Exploring the Physical world is a strand that focuses on enabling students to investigate the formation and alterations of the physical world. Students acquire knowledge and skills to comprehend and elucidate the physical aspects of the world. They actively engage with

subjects about physical geography, examining their interconnections and the potential implications in the student's lives.

Exploring how to interact with the physical world is a strand dedicated to assisting students in comprehending how individuals interact with the physical world and the potential consequences on their lives. Students delve into how humans rely on, adjust to, and modify the physical world. They utilise their knowledge and skills to elucidate how people engage with the physical world for economic endeavours and adapt to natural phenomena.

The strand Exploring people, place and change centres on students' exploration of the dynamics between people, place and transformation. Students immerse themselves in subjects encompassing globalisation, development, population, interconnectedness, and potential impacts on their lives. Students apply their knowledge and skills to explain settlement patterns, urbanisation, demographics, and human development.

This extensive chapter aims to guide the reader in comprehending the function of the education system in Ireland, particularly the Junior Cycle, and how the subjects of Science and Geography are intended to be integrated according to this Irish curriculum.

This has implications for the way science is taught in schools, and, notably, the Earth Sciences, mainly integrated into the subject of Geography, specifically in the strand Exploring the Physical World. However, palaeontology and related concepts such as fossils and past extinctions do not seem to be, at least in a clear way, included in the Junior Cycle programme, with probably some mentions in the Geography strand Exploring the Physical World and concepts like evolution being discussed under the subject of Science, particularly under the Biological World strand.

2.1.2 Portugal

In Portugal, schools are still a big part of scientific communication and learning. They play a vital role in influencing how young people behave and understand Science in a student-centred curriculum adapted to their needs.

To gain insight into the influence of schools on students, it is crucial to grasp Portugal's approach to its education system.

Schools in Portugal are divided into three levels: Preschool, Basic Education and Secondary education (Oliveira, 2023).

According to the Direção Geral da Educação (DGE) (dge.mec.pt/3o-ciclo-do-ensino-basico-geral, accessed on 11/2/2024), Basic Education in Portugal is structured into three cycles: the First (1st) cycle – which corresponds to the first four years of school; the second (2nd) cycle corresponds to the fifth (5th) and sixth (6th) years of school; and the third (3rd) cycle, which corresponds to the seventh (7th), eighth (8th) and ninth (9th) years of schooling. After completing basic education, students must enrol in Secondary School, corresponding to the final three years, completing the mandatory education, or until they reach 18 years of age.

Educational institutions may fall under either the public or private sector, where public institutions receive government funding and private ones do not and necessitate tuition payments (Oliveira, 2023). Basic Education in Portugal can be provided through two main organizational structures: school clusters (*agrupamentos de escolas*) or individual schools. This applies to both public and private education networks, including cooperative educational

institutions (institutions that operate under public-private partnerships or other collaborative arrangements). For students in the 3rd Cycle of Basic Education, education and training programs can be delivered in School Clusters, these are groups of schools that operate under a single administrative framework, usually including primary, basic education, and sometimes secondary school; Independent Schools, which include standalone schools, either public or private, that are not part of a school cluster; Vocational Schools are schools focused on practical and career-oriented education, which may be public or private and Private and Cooperative Educational Institutions which include privately funded schools or schools that operate in partnership with the state under specific agreements, offering alternative or specialised education paths (Erodyce, 2024).

Both private and public schools must follow the DGE curriculum and guidelines.

The school year is divided into two semesters in the Portuguese territory, independent of school type and year. The first semester begins in September and ends in January, while the second semester runs from February to June. The precise end week in June varies between school years.

The mandatory breaks within the lecture year include Christmas break, mid-break in February, Easter, and Summer break.

2.1.2.1 3rd Cycle of Basic Education

Basic Education ensures that students receive a shared foundational education, fostering the development of skills needed to continue secondary-level studies. This approach considers a set of values, principles, and fundamental competency areas essential for student's learning over the 12 years of mandatory education (Erodyce, 2024).

As per DGE (dge.mec.pt/3o-ciclo-do-ensino-basico-geral, accessed on 11/2/2024), the 3rd cycle allows students to pursue further studies and develop professional skills. These students have mandatory subjects like:

- Portuguese
- Mathematics
- Citizenship and development
- Physical Education
- Natural Sciences
- Technologies for communication and information
- History
- Geography
- Physics and Chemistry
- English
- A second Foreign Language (German, Spanish, or French)
- Visual Education
- Technological Education
- Musical Education

Pupils can also join moral and religious education as an extra subject. The range of foreign languages offered to students varies per school, depending on the teaching resources and the student's needs and interests.

2.1.2.1.1 Natural Sciences

This chapter will delve into the subject of Natural Sciences, where topics regarding Earth Sciences are discussed in more detail. The focus on this particular subject is due to its role as an initial platform where students encounter fundamental concepts like geological time, rock cycle, fossils and past environments, and extinctions, among other geological and palaeontological concepts.

Following DGE (2018) guidelines, students in the 3rd cycle of Basic Education have the mandatory subject of Natural Sciences. This subject intends to improve knowledge on issues previously mentioned in the 2nd cycle and stimulate the student's curiosity about the natural world and interest in Science.

The main focus of this subject is to develop their general understanding of principal ideas and structures of Life and Earth Sciences, aspects of the history and nature of science, scientific investigation procedures, as well as inquiring about human behaviour towards the world and the impact that Science and Technology have in the surrounding environment and living beings.

The goal of Natural Sciences in Basic Education, according to DGE (2018), is to expand students' learning horizons by granting them access to significant scientific concepts and their applications while fostering an understanding of the boundaries and possibilities of Science and its technological uses in society. Furthermore, this subject must instil in students an awareness of the consequences of human intervention on Earth and the importance of embracing responsibility and equitable citizenship behaviours aligned with sustainable development.

Throughout the 3rd cycle of Basic Education, three main themes are explored per cycle year. Earth in Transformation is lectured in the 7th class, Earth – a Planet with Life is taught in the 8th class and Living Better on Earth is addressed in the 9th class. These themes serve as foundational pillars for understanding Earth and the Life Sciences.

As in the 2nd cycle, 3rd cycle students are expected to acquire transversal skills that will allow them to understand the subjects in Natural Sciences in school holistically. These are:

- Develop scientific explanations grounded in concepts and scientific evidence acquired through various practical activities such as laboratory work, field trips and studies, research and experiments
- Apply the acquired skills to contemporary issues and novel context
- Articulate and communicate critical viewpoints scientifically aligned with Science, Technology, Society, and the Environment
- Fuse knowledge from diverse disciplines to delve deeper into the Natural Sciences topics
- Acknowledge that science is a human endeavour with distinct objectives, methodologies, and models of thinking, demonstrated through the exploration of current or historical events that illustrate its nature
- Gather and organise information independently from various sources, placing particular importance on using digital technologies and incorporating prior knowledge to generate new insights
- Create models that facilitate the representation and examination of structures, systems, and their transformations

In 7th class, students are expected to acquire a comprehensive view of the Earth by addressing geological dynamics from a multidimensional and interdisciplinary perspective.

In 8th class, aspects related to the necessary conditions for life on Earth are explored, along with the interplay among terrestrial subsystems. This allows for a diverse and ongoing scientific interpretation of the evolution of life on the planet and an appreciation of the importance of scientific knowledge in promoting sustainability on Earth.

During the 9th year, the aim is for students to understand the human body comprehensively and how integrated knowledge of its functioning enables humans to live a better quality of life.

In essence, in Portugal, learning Natural Sciences is a crucial step to ensure students understand the world around them, and within this realm lies the science of Palaeontology.

2.2 Family Impact: Family Dynamics

Family is one of the most cherished institutions in Western society, and it plays a vital role in shaping children's and young people's attitudes.

According to Barnard (2023), Family consists of a collective of individuals bound by the bonds of marriage, blood, or adoption. It forms a cohesive unit residing together and engaging in social interactions within their respective roles, typically encompasses spouses, parents, children, and siblings. It is essential to distinguish a family group from a household, which might include boarders and roomers sharing a common residence. Additionally, family differs from kindred, which, although also tied by blood, may span multiple households. Often, the family is synonymous with a marital pair. Still, the fundamental element of the family group lies in the parent-child relationship, which may be absent in many marital partnerships for various reasons.

Ireland is traditionally viewed as a democratic anomaly in Europe, and it has experienced notable transformations in family life, particularly in the past decade. In pre-industrial rural Ireland, there was a preference for family labour over non-family labour, and the permanent departure of young adults from home typically occurred only upon marriage (Guinnane, 1992 in Hannan, 2008). The practice of impartible inheritance, where property passed to a single heir, strengthened familial bonds. This led to the elderly being cared for within the stem family, similar to Mediterranean European countries like Portugal, Spain, Italy and Greece. This southern group is characterised not solely by religious or geographical factors but primarily by shared features, including Catholic solid influence (Hannan, 2008).

In Portugal, until the fifties and the sixties, the Western concept of family was grounded. This perspective viewed the family as a space of emotional stability for adults and the socialisation of children. In essence, it encompassed the transmission of cultural and social values from the society in which individuals were born. Through interaction with both parents, children learned appropriate behaviour, understood what was permissible and forbidden, and grasped the various social roles assigned to different family members. Family also held a paramount position in Portuguese society as the primary and most influential socialising entity, where learning occurred through firsthand experiences within family life (Amaro, 2006 in Dias, 2011).

In the 21st century, the family creation and breakdown pattern has swiftly evolved in numerous industrialised nations. Generally, there is a growing trend of postponing marriage and childbearing. The prevalence of separation and divorce has significantly increased. In several countries, premarital cohabitation and cohabitation as a substitute for marriage have become widespread (Hannan, 2008), and the concept of a traditional family has been changing.

The contemporary perspective on family is increasingly positive, portraying it as a comforting and secure space. This positive view of the family comes hand in hand with a diminishing emphasis on its traditional sacrificial expectations. Frequently, the family is now seen merely as a means for personal and intimate fulfilment. The increasing prioritisation of individual happiness results in the family being increasingly utilised to achieve that end (Fernandes, 1994).

This means that young individuals generally express contentment with family relationships. However, this does not mean there is no conflict within this institution, especially during adolescence. As per Cardoso et al. (2008), conflicts may initially arise due to a growing sense of freedom and autonomy. This could be attributed to the relatively brief adolescent life cycle's unique dynamics, particularly in negotiating autonomy between parents and children.

In the current century, a new variant is taking over western homes and affecting family dynamics: Media.

The traditional image of a family gathering around the television has been gradually replaced by a combination of natural and virtual social networks facilitated by the rise of new media (Espanha et al., 2006 in Cardoso et al., 2008).

The younger generation is exposed to various interactive communication within a system characterised by multiple producers and distributors. The acquisition of new technologies prompts the hypothesis that a new negotiation or familial tension may emerge concerning adolescents' autonomy, parental authority, household rules, and control over media consumption (Cardoso et al., 2008). This is a new challenge that families face today.

A factor that may also affect family dynamics is current economic circumstances, such as present income. Income differences among families are perceived as a consequence of preceding factors rather than being considered the primary explanation for the relationship between child outcomes and family structure (Hannan & Halpin, 2014).

Among the various influences on the lives of children and young people, educational institutions have one of the most significant impacts.

Families' commitment to their children's educational journeys has transformed, with a focus on seeking higher-level diplomas and a deeper integration of the school into family dynamics. Nowadays, families actively encourage their children to pursue education, adapting their practices and interactions to support this process. The school has become an element in strategies for social continuity and daily interactions (Diogo, 2006).

As per the author above, academic success is paramount for most families, serving as a crucial factor in defining educational and socio-professional trajectories. It indicates that parents have specific projects and goals that shape their youngsters' education, which may be adjusted based on their academic performance. Apart from academic achievement, guidance in a youth's educational journey plays a vital role in determining educational and professional futures, thus occupying a central position in the actions and interactions that shape family life.

Typically, the family instils societal norms and values in a child, overseeing their physical and emotional well-being. One of the primary duties of parents lies in steering their progenies' educational development. However, instances such as divorce, various forms of separation, or the death of a spouse may result in a single parent assuming these roles. Ideally, the family structure offers security and stability crucial for a child's development. Disruptions in this structure can significantly impact the ability to function normally or excel academically (Amofa, 2013).

For example, a study by Martins (2010) shows that in school, a significant number of Portuguese students show a decline in academic performance as a result of their parent's divorce. Other studies, like the one completed by Chavda and Nisarga in 2023 in India, identified a decline in academic performance, motivation, and creativity among individuals raised in single-parent households. The diminished academic performance in such cases may be attributed to the socioeconomic status of single-parent families and the limited involvement of the parents in school-related activities. However, there is a correlation with paternal engagement at school. Increased involvement in school correlates with improved academic performance and behaviour, reflected in a higher score, reduced absenteeism, and a positive attitude towards education.

Sibling relationships also play an essential role in shaping children's and young people's attitudes and overall family dynamics. A family with an only child differs significantly from a family where two or more children grow up together. Their relations and how they impact each other's decisions depend on many factors.

Factors such as gender, age gaps, siblings' personalities, birth order, personal interests and even the presence of a sibling with a disability or chronic illness will impact sibling ties (McHale et al., 2012).

The same author suggests that the significant diversity in cultural and family environments where adolescents grow underscores the importance of incorporating these varied contexts to comprehend the variations in sibling relations.

Collectively, the theories and research on siblings indicate that sibling relationships are influenced by individual, family, and external factors. While siblings are a common presence in the lives of children and adolescents, the nature and roles of their relationships vary significantly across different times and locations. These variations have corresponding implications for the extent and impact of sibling influences on youth and families ([Weisner, 1989; Updegraff et al., 2010] in McHale et al., 2012), and research incorporating sibling dynamics has revealed that descendants can also impact parent's expectations, knowledge, and parenting behaviour, influencing their siblings (McHale et al., 2012).

Today, we live in a period marked by significant shifts in values and social organisation, influenced by factors such as increased life expectancy, demographic pyramid changes, the emergence of new values and behaviours, the separation of marriage from sexual initiation and the acceptance of same-sex marriages. Due to this, the traditional family no longer adheres to the ingrained mental construct of a set structure involving parents and their children. More and more, we encounter that is the norm within the context of new paradigms, where members do not always share the same residence, descendants are not always children of the adults in the family, and these are not always of decedent genders (Alarcão & Relvas, 2002 in Dias, 2011).

In this way, in countries like Ireland and Portugal, the family stands as the most resilient, secure, and formative element in shaping the personalities of its members.

Is it a crucial environment for moulding children's and adolescents' character, with adults playing an important part in fostering the complete development of capabilities, attitudes, and values that uphold the competencies of the entire system (Dias, 2011).

This chapter emphasises the family's pivotal role in shaping the attitudes of children and young people. The impact extends beyond mere familial interactions, influencing their perspectives on education, career choices, friendship, and various other aspects of life. Family is a dynamic and multifaceted structure susceptible to numerous variables, including the influence of siblings, divorce, remarriage, religion, socioeconomic status, single-parenting, media exposure, culture, community ties, economic circumstances, racial backgrounds, and experiences with illness or loss within the family.

These diverse factors significantly shape the dynamics and structure of the family unit. The resultant amalgamation of influences, especially for young individuals, contributes to forming preferences, dislikes, and ultimately, attitudes towards school subjects and, more specifically, the Earth Sciences.

2.3 Broader Society

This chapter encompasses everything outside the scope of school and family. These include media, museums and galleries, artwork, sports, personal experiences and aspirations, and many others. Nevertheless, for time and academic purposes, the focus will be on three main topics: media, museums, and aspirations for scientific careers.

2.3.1 Media's Role: Influence of Media on Youth

As per Dictionary.com (2023), Media is a means of communication, such as radio and television, newspapers, magazines, and the internet, that reaches or influences people widely.

Even though the younger generation still uses books and television, and as per Dietz and Strasburger (1991), research on cognitive development suggests that television serves as a stimulus for learning, fostering a platform from which children and young people acquire knowledge and information, in the European digital world of 2024, the internet takes the central stage in the most significant amount of time spent.

Children and young people primarily use the internet at home, although there is access to it in schools and other public places like libraries or civic centres. However, these locations impose stricter limitations on both time and purposes of usage (Instituto Nacional de Estatística (INE), 2008 in Jorge et al., 2011).

According to Jorge et al. (2011), for young internet users, entertainment comes second after communication in terms of usage. Whether it is watching a movie, gaming, listening to or downloading music, or pursuing other hobbies, the internet is a versatile medium to fill leisure time and cater to the interests of many individuals. The utilisation of technologies for communication purposes is increasingly prevalent across various age groups, particularly among young people. Social interactions hold immense significance, whether face-to-face

during gatherings with friends or through mediated means like mobile phones or digital platforms.

Social media has a big impact on modern western society; global technological advancements have transformed how people live and communicate, especially the younger generation (Augusto, 2021).

Cardoso et al. (2008) refer to social media platforms as virtual online spaces facilitating the sharing of diverse content forms like images, videos, files, texts, and more. They enable the creation of chat rooms for conversation, blogs for discussion on various topics, and interest groups engaging in new posts, debates, and meetings within virtual communities on websites or forums.

Social networking sites emerged in the late 90s and gained popularity in the early 2000s with platforms like *Myspace* and *MSN*. Technological advancements were not as sophisticated as today, resulting in prolonged message delivery times and hours-long post uploads on these websites. Over time, the shift from bulky laptops and corded landlines to internet-based platforms like *Facebook* and *Tumblr* in the early 2000s allowed people to connect with others globally in real-time. In the late 2000s and early 2010s, there was a notable transition in technology towards smaller, more portable devices, marking the beginning of a new digital era (Williams, 2023).

In Ireland, a study completed by Kalu in 2019 concludes that male millennials spend most of their time on social media, being influenced by marketing campaigns that target their customers through platforms such as *Instagram*.

The idea of a population immersed in media and social media is not inheriting negative.

Research conducted in Ireland by Ferguson (2024) concludes that Social Media use, at least regarding general use or time spent on social media, is not associated with negative outcomes for youth.

Media should encourage the critical thinking of their audiences, particularly among younger generations, who are often taught to memorise information without questioning it. Cultivating constructive criticism is essential for learning (Augusto, 2021).

The author above, also mentioned that today, many social media platforms emerge annually to cater to the multifaceted needs of a time-conscious customer society that highly emphasises these networks to stay updated with daily information. These platforms are invaluable tools for swift, cost-free communication in everyday life, allowing young individuals to stay connected with peers, stay up-to-date on events, and serve as avenues for research and work.

Due to this, science and technology are fundamental components of contemporary societies. A nation's economic advancement and overall prosperity hinge on the knowledge acquired through Science and its practical implementation in technology. Moreover, scientific understanding plays a vital role in many everyday choices and in fostering a deeper comprehension of the world, encompassing decisions ranging from the medication we select to the mobile phone model we decide to purchase (Coutinho et al., 2004).

Technological advances and the widespread use of social media have paved the way for numerous successful endeavours to foster engagement with Science, starting from primary school and extending to higher levels of education. Universities and institutes organise events

that allow primary and secondary school students to delve into science topics beyond their standard curriculum. These events can act as a catalyst, fuelling the interest of young individuals in pursuing Science and, crucially, enhancing awareness of science's impact on daily life (Murphy, 2022).

According to Weingart (1998), particular parameters governing media production significantly influence the selection of news handling. Factors like information accessibility, the availability of essential resources like time, money and expertise, reliance on advertising revenue, and editorial policies all shape how information is processed and disseminated. Given these influences, it is unsurprising that media cannot solely function as conveyors of precise representations of scientific discoveries or other events that are completely faithful to reality.

Media literacy educators play an essential role in mediating this challenge. They must empower students to actively create content by harnessing the digital tools available for self-expression, advocacy, and education. It is crucial to tackle topics integral to navigating adolescence in a world of mass media, popular culture, and digital platforms. This includes teaching students to dissect news and advertising, understand the societal roles of music, differentiate between propaganda, opinion, and factual information, scrutinise the portrayal of gender, race, and class in media, comprehend media economics and ownership, and critically examine descriptions of violence and sexuality in media messages. As digital media continues to evolve, there is a pressing need to cultivate new media literacy skills. These include issues surrounding personal and social identity, navigating the intricate balance between privacy and public exposure, and engaging with media use's legal and ethical dimensions (Hobbs & Jensen, 2009).

Understanding the influence of the Media on individuals, mainly those still developing critical thinking skills like children and adolescents, is vital. This comprehension is key in recognising how media shapes their perceptions of the world they inhabit, mainly when it serves an educational rather than purely entertainment purpose. Nowadays, the challenge lies in crafting content that effectively fulfils both roles.

After completing this chapter, it is possible to conclude that in the context of an interconnected digital landscape of the 21st century, today's youth are exposed to a significantly larger volume of information than previous generations, especially through the internet. It is fundamental to comprehend the implications of this exposure and ensure that young people possess the necessary competencies to navigate the internet ethically and responsibly.

Positively, social media is an effective platform for swift and transparent collaboration on scientific inquiries, introducing numerous exceptional scientists to the public eye (Thorp, 2022).

Earth scientists, in particular, palaeontologists, have always used Media, in general, to promote and draw young people to their world, either through films with recognisable characters like dinosaurs, colourful books, documentaries in the most accessed online streaming platforms or social media with short informative videos. The truth is that Media serves as an effective avenue for generating interest in the field of Science, and the principal goal of this dissertation is to ascertain the extent of this influence on the younger demographic.

2.3.2 Cultural Institutions: Impact of Museums and Science Centres

Non-formal education occurs beyond the school setting and is facilitated by museums, media, and other institutions that arrange various events like workshops, fairs, and gatherings. The purpose is to impact scientific knowledge to a diverse audience. Non-formal learning, in this context, evolves according to the individual's preferences within an environment crafted to be enjoyable (Chagas, 1993 in Delicado, 2013).

Museums significantly influence the dissemination of scientific knowledge within the community, spanning diverse geographical locales from small towns to cities. Their engagement extends across various age groups, particularly impacting the attitudes of the younger generation. Museums collaborate with schools to develop programs that frequently align with the established curriculum.

For this reason, this chapter explores the role of museums and other science centres in promoting science to the public and their challenges in tailoring educational spaces for each age group's needs.

According to the International Council of Museums (ICOM, 2022) the definition of a Museum is as follows:

"A museum is a not-for-profit, permanent institution in the service of society that researches, collects, conserves, interprets and exhibits tangible and intangible heritage. Open to the public, accessible and inclusive, museums foster diversity and sustainability. They operate and communicate ethically, professionally and with the participation of communities, offering varied experiences for education, enjoyment, reflection and knowledge sharing."

The museum has been a symbolic entity in Western society since the Renaissance. This symbol is intricate and multi-faceted, functioning as a representation of both dominance and liberation, education and leisure. As platforms for exhibition, museums, through their collections, displays, and structures, mediate many of society's fundamental values (Crooke, 2007).

According to O'Kelly (2018) from the Irish Museums Association, since the 1980s, nearly two-thirds of Irish museums have been established, reflecting a period of substantial investment.

Northern Ireland has around 65 museums, while the Republic of Ireland boasts approximately 140. Among them, 109 are established by national and local governments, and those participating in accreditation schemes are led by the Heritage Council, with 61, and the Northern Ireland Museums Council, with 42.

Regarding their size, museums in Ireland are generally compact. The predominant types of collection entrusted to them are mostly Archaeology and History, accounting for 46%, followed by a general or "mixed" classification at 25.3%, and art museums representing 17.2%. Digitalisation falls on both ends of the spectrum, with 32.2% of collections not yet digitalised and 21.1% of museums having digitalised more than 80% of their collections. However, access to this digitalised collection remains limited, as many museums provide online access to only a relatively small selection of artefacts from their collections (O'Kelly, 2018).

In the latter half of the nineteenth century, Portugal initiated the development of a set of national museums. Initially, these collections were curated by the monarchy and were significantly influenced by the often-challenging relationship between the state and the Catholic Church (Bodenstein, 2011).

As per the same author, in the 1980s and 1990s, Portuguese museums underwent a rapid and substantial period of modernisation. During this time, they endeavoured to overcome a prolonged period of social and economic lag compared to the rest of Europe, actively engaging in cultural policy development.

In Portugal, consistent with the database Pordata (2024), in 2023, 426 museums were open to the public.

The notable development of Portuguese museums in recent decades has occurred almost concurrently with advancements in the national scientific and technological system, the promotion of policies fostering scientific culture, and the establishment of museums and science centres. Although the state has played a predominant role in driving and financing these developments, the significance of individual initiative and the contributions made by various institutions, including universities, local authorities and private associations, was also fundamental (Delicado, 2006).

As per the same author, museums have consistently served as essential tools in policies promoting scientific culture. The belief is that the observation and/or manipulation of three-dimensional objects, such as instruments, machines, models, and interactive devices, within an exhibition ensures a more effective transmission of knowledge generated by the scientific system. Additionally, this fosters greater trust in Science and its technological applications.

This way, cultural institutions are also often used as informal learning centres, which hold an advantage in sparking interest and facilitating learning, as their non-school environment inherently appeals to many ([Dierking, 2007; Falk & Dierking, 2010] in Strager & Astrup, 2014).

Museum education involves the effective utilisation of museums as dynamic learning experiences and as vibrant environments throughout lifelong learning. These experiences empower students to comprehend the value of and preserve historical artefacts and cultural heritage, fostering respect for diverse cultures and embracing multiculturalism (Sheppard, 2001 in Akamca et al., 2017). The educational offerings in museums not only facilitate learning about the artefacts on display but also contribute to the development of cognitive, effective, and linguistic skills, including verbal expression, observation abilities, and associative thinking ([Ampartzaki et al., 2013; Synodi, 2014; Hackett, 2014] in Akamca et al., 2017).

Per Delicado (2013), scientific museums refer to diverse institutions focused on presenting science through exhibitions. This includes science museums and centres, natural history museums, botanical gardens and zoos. Despite their distinct histories and content, these various institutions have been aligning in discourse and exhibition practices, emphasising their educational objectives and the non-formal teaching of sciences. This involves activities such as observing scientific instruments, exploring living or preserved natural specimens, manipulating interactive devices, and engaging with explanatory text and diagrams.

The primary objective of scientific museum exhibitions is to showcase the scientific understanding of a specific subject. Functioning as informative displays, these museums draw upon decades or even centuries of research to organise their exhibits, essentially serving as windows into various scientific disciplines. While exhibitions exclusively tailored for school audiences are not widespread, many themes addressed in scientific museums are displayed along with the contents of the school curriculum, a deliberate convergence curated by organisers.

According to Cordeiro (2023) the Portuguese Museum Network incorporates 165 museums in 2023 of which ten museums are dedicated to Science and Technology and six to Natural Sciences and Natural History.

As per Brandão (2008), the first museum to exhibit fossil collections was the Gabinete de História Natural da Ajuda in Lisbon, established in 1768. This institution contained a collection that included fossils brought from the Portuguese colonies. In 1779, the Natural History Museum was created and operated within the Royal Academy of Sciences of Lisbon, which later housed the collection.

By the 20th century, some museums showcased complete skeletons as integral parts of their permanent collections. The rise of such exhibitions since the 1980s has paralleled the increasing demand for this attraction (Mateus, 2015).

Museum activities also cater to the interests and needs of specific audiences in a manner that exhibitions may find challenging. Notably, school groups stand out as a privileged audience for this case. The most prevalent method of promoting science education through museums is through workshops or educational sessions specifically designed for school audiences. These activities, led by instructors, incorporate pedagogical and playful elements, usually linked to visits to permanent or temporary exhibits, and are somehow connected to the thematic and scientific focus. They deepen understanding, encourage direct and active participation of visitors, and facilitate the acquisition of more structured knowledge (Delicado, 2013). With this in mind, the main goal for museums and similar institutions like science centres is audience attraction, particularly among the youth.

Numerous activities, like conferences, film screenings, lectures, and training sessions, are widespread across many museums but have become somewhat routine, and museums that truly stand out embrace innovative strategies (Cardoso, 2013). This means that museums must place a great emphasis on understanding their visiting public. Their characteristics, needs, interests, and how they engage with the museum environment. While the adult and child audiences have been extensively studied, the exploration of the adolescent public is only just beginning. One might question the interest in a relatively small and challenging-to-engage audience transitioning from childhood to adulthood (Lemerise, 1995).

As per the same author, adolescence covers just six years, and ages range from twelve to seventeen, a short period that could be easily overlooked, considering many adolescents visit museums as children and may return as adults. However, attracting adolescents to museums is no easy feat. Historically, inviting students from secondary schools to visit museums has been challenging. Offering extracurricular activities that capture and retain the interest of young people demands not just creativity but also resources, like time, money, personnel and space, all of which are often scarce in museums.

Data published by Strager and Astrup (2014) shows that museums, such as Natural History Museums, are seen as less appealing by adolescents precisely because they view them as having a child-friendly image. This raises a significant apprehension that warrants further investigation. Suppose the child-friendly perception of natural history museums and science centres becomes synonymous with Science. In that case, there is a risk that young people may perceive Science as juvenile, something to outgrow as they mature.

In reality, young people create their own culturally expressive spaces that promote the construction of different identities linked to practices, symbols, and representations,

attributing meaning to the group. These groups, with common yet heterogeneous characteristics, are called “micro-tribes” (Maffesol, 1990 in Cardoso, 2013).

For that reason, and according to Cardoso (2013), museums should represent more than just spaces for admiring objects; they should primarily serve as venues for diverse experiences. The youth also stress the importance of exhibitions being captivating, urging the integration of urban cultures that resonate with them as a way of engagement.

For example, in the case of Palaeontology, fossils and other objects of such value hold all the importance for scientific purposes, irrespective of their completeness and aesthetic appeal. Nevertheless, these fossils can often be challenging for a layperson to interpret, representing most of the public visiting museums. With this in mind, a fully assembled skeleton in lifelike form allows for almost universal comprehension. It offers quicker and easier readability, making replicas more attractive to the broader audience (Mateus, 2009 in Mateus, 2015).

In addition to building more attractive exhibitions, according to Cardoso (2013), family habits influence consumption patterns by transmitting values. For instance, if a family has a tradition of reading, it becomes a natural activity, and the same principle applies to visiting museums and other habits passed down within families. Some testimonials suggest that young people may avoid visiting museums if their families do not accompany them. Alternatively, they might visit museums with their families only during holidays in other cities.

Additionally, the lack of interaction in museums discourages a significant portion of young people. Even if a museum boasts a fantastic team, impressive architecture, superb collections, excellent management and outstanding programs, it will not reach its intended audience if it fails to bring about any change or lacks impact (Cardoso, 2013).

That is why conveying scientific information to the general public in a way that is easy to comprehend but accurate and non-biased, adapted and attractive to all age groups, is hard.

In the realm of dinosaurs and Palaeontology, this entails finding a middle ground between the authenticity of the original fossil and the captivating allure of a complete dinosaur. This balance becomes particularly challenging when considering the audience that attracts visitors to dinosaur exhibitions (Mateus, 2015).

Upon concluding this chapter, it becomes evident that museums substantially influence people’s lives. A visit to a museum or other cultural institution imparts experiences and knowledge in a manner distinct from what students encounter in a formal educational setting or at home. Various factors contribute to the frequency of young people’s museum visits, whether facilitated through a school field trip, a family day out or personal initiative. The magnitude of impact these institutions have on them is contingent upon several variables, encompassing budget, expertise, geographical location, museum typology, available programs and exhibitions, and qualified personnel, among other aspects.

2.3.3 Choosing a Career

In the framework of this dissertation, one of the objectives is to understand the factors influencing young people in their selection of a future career in Science.

This chapter will highlight the factors that most commonly shape adolescents’ opinions and perspectives when making a career decision, focusing on a Scientific occupation.

Navigating careers is an inherent aspect of life, requiring a multidimensional perspective in contemporary societies. The process of selecting a career, intertwined with the high school and university phases, introduces psycho-social stress due to its complexity (Koçak et al., 2021).

When choosing a career, Santos (2005) in Pereira and Garcia (2007) cites that adolescents actively seek the opinions of those close to them. They often turn to parents, siblings, relatives, and peers and sometimes seek professional advice.

However, making a decision is not easy. The career choice process is intricately woven into a complex network of factors encompassing individual and social dimensions. It involves influences from the family environment, peer groups, educational background, the world of work, and social, political, economic, and cultural context. All the factors continuously interact, shaping and being shaped by the trajectory of human vocation (Almeida & Melo-Silva, 2011).

Families play an important role in shaping their children's preferences, beliefs, and self-concepts, offering positive and negative perspectives on career choices (Koçak et al., 2021).

As mentioned by Almeida and Melo-Silva (2011), family influence encompasses tangible, practical actions, such as parental interventions providing financial support, educational guidance, facilitating discussions/actions for vocational exploration, and subjective factors that are not always clear and sometimes unconscious. These subjective elements include support, approval/disapproval of choices, expectations of outcomes, demands, and influences from family interaction styles. Parent's values and beliefs about the world of work, their vocational issues, dreams, and projects for their children, as well as challenges in the parent-child separation process, among other factors, also contribute to influence. All these variables either enable or constrain the vocational development of children and, more specifically, the career choice process.

Choosing a profession and entering the adult world creates anxieties and conflicts for adolescents and parents, who hold various expectations about their descendant's future (Almeida & Pinho, 2008). These expectations are based on their experience in their career decisions, acting as social models for young people (Pereira & Garcia, 2007).

Nevertheless, while the family plays a significant role in shaping their member's career choices, it is essential to consider the influence of peers. According to Naz et al. (2014), peers and friends constitute crucial elements in the socialisation process, with their influence and pressure widely recognised for shaping and moulding an individual's life trajectory.

Magalhães and his team (1998) in Pereira and Garcia (2007) defined peers as a group of individuals of similar age who support each other, engaging in discussions about their professional future, career paths, professional training, and personal experiences during this stage of their lives.

A study completed by Naz et al. (2014) in Pakistan concludes that the narratives provided by peers and friends play a significant role in influencing the behaviour of individuals, particularly concerning career decision-making, personality development, and decision-making processes. It also concludes that while parents initially play leading roles in the value transmission during the socialisation process and personality development, friends emerge as having a more substantial impact on lifestyle adaptation, appearances, decision-making, and even educational choices. The information indicated that peers and friends positively contribute to

selecting subjects, classes, laboratories, libraries, and books and assist in homework and co-curricular activities. Career decision-making statistics reveal that peers and friends play a crucial role in decisions related to professional careers, job selection, employment opportunities, and earning tendencies.

In addition to the impact of family and friends on young people's career decisions, gender can also play a role in selecting a future profession. As stated by Oliveira (2018), the explanation for gender-based differences in professional career choices is likely more emotional and sociological, with gender stereotypes often serving as barriers, frequently invisible and challenging to overcome. In a study conducted by this author, the findings indicate no significant differences in how boys and girls are taught, and the way female and male teachers teach has not been noticeable. However, career choices are influenced by gender stereotypes present in both students and teachers.

As per the author mentioned above, teachers and family play a crucial role in choosing a profession that deviates from traditional gender norms. Individual characteristics are more significant for professional success than gender. For example, by the 1800s, Ireland had a growing scientific and economic interest in geology. In the past few decades, a noteworthy shift has occurred in the distribution of geology undergraduate and postgraduate positions, with women occupying at least 50% of these roles (Higgs & Jackson, 2007). In Portugal, women represent 55% of Ph.D. students in Science. This percentage is lower than in 2007, when women represented 61.2% (European Commission, 2019 in Morais, 2021).

Although, compared with the rest of Europe, Portugal has been decreasing the disparity between genders in Science, there are still underrepresented domains. Notably, this is evident in Information and Communication Technologies (21%) and the realms of Engineering (37%) and Production and Construction (29%) (European Commission, 2019 in Morais, 2021), despite an observed increase in their numbers in this field between 2013 and 2017 (Morais, 2021).

A career in Science has become more prominent in the past few years due to the significant growth in information and computer technology, which has led to substantial transformations in the economy and workforce of the 21st century. Science, Technology, Engineering, and Mathematics (STEM), as an emerging field, is pivotal in driving these changes. This evolving landscape emphasises the need for the timely preparation of the next generation (National Academy of Sciences, 2007 in Zhang & Barnett, 2015).

Preparing school students to choose a career in academic scientific research or science and technology is crucial. A student's interest in STEM studies and career options is critical to STEM persistence beyond mere academic achievements ([Maltese & Tai, 2010, 2011; Tai et al., 2006] in Sasson, 2020).

As seen before, parents have an essential influence when it comes to their children choosing a career path, and a profession in the scientific field is no different.

Hampten-Thompson and Bennett (2013) in Sasson (2020) concluded in a UK study that students with a parent in a science-related career express higher levels of enjoyment and future orientation towards the subject. Specialising in STEM subjects during school may serve as a predictor for career choices.

It is also crucial to understand that evidence supports that parents' socioeconomic status impacts students' academic performance and educational choices (Ikonen et al., 2017), either in STEM or any other field.

The interest young people develop in Science during their school years is crucial in igniting interest in science careers. In Sasson (2020), Taskinen et al. (2013) demonstrated that engaging in additional science activities and experiencing real-life applications in science are highly relevant factors for increasing students' interest and enhancing their science self-efficacy. The latter, in turn, fosters students' interest in STEM careers.

Creating methods and materials is essential in assisting teachers in providing current guidance to students interested in pursuing a STEM career. This involves illustrating the connections between scientific subjects and real-world applications while introducing diverse professional role models (Ikonen et al., 2017).

As discussed in this chapter, various factors influence the decision-making process. This decision becomes more challenging when students, typically under the age of 20, strive to select a career that will give them fulfilment, a sense of purpose, and happiness.

People tend to weigh the happiness a profession can bring them when choosing a career. Many factors contribute to happiness, such as geographical location, family social support, occupation, health, gender, and education ([Dogan et al., 2000; Quimby et al., 2004, Halim et al., 2018] in Koçak et al., 2021). This underscores the importance of adopting a holistic perspective that encompasses family, school, and work experiences when understanding the reality of the career journey (Koçak et al., 2021).

This section aims to emphasise the role of interpersonal relationships in students' career decision-making process and how complex and multifaceted it is. As per Zhang and Barnett (2015), interactions and shared experiences with others play a significant role in shaping the career orientation of young individuals. Numerous studies highlight the influence of parents, teachers, and peers on shaping student's attitudes towards Science, thereby impacting their career orientations. People's ideas and perspectives are shaped by their cultural backgrounds, social interactions, and community affiliations. Therefore, understanding students' visions of their careers requires delving into their experiences and perceptions of what is essential in their daily lives.

3. METHODOLOGIES

Human knowledge encompasses facts and theories, continually expanding with the addition of new information, concepts, and innovative methods. This evolving knowledge equips us to comprehend, explain, control, predict, and adapt to various situations. Multiple resources contribute to our knowledge acquisition, varying reliability (Lokesh, 1984).

Some of these resources are scientific methods for data collection.

The significance of data collection methods lies in their influence on the subsequent utilisation of gathered information and the interpretations they can yield. The researchers' chosen methodology and analytical approach significantly shape how the collected data is employed and the explanations it can generate (Paradis et al., 2016).

The data collection for this dissertation took place in schools. It focused on students, mostly between 12 and 15 years of age, in the Junior Cycle in Ireland and the 3rd Cycle of Basic Education in Portugal.

The methodology chosen for this research was surveys and focus groups. Surveys are suited for capturing the perceptions, attitudes, beliefs, or knowledge within a defined and predetermined sample of individuals (Paradis et al., 2016).

The questionnaire distributed in schools was six pages long and contained 33 multiple-choice questions in the Irish version (see Annexe I) and 32 multiple-choice questions in the Portuguese version (see Annexe II).

The Irish survey included an additional question, asking students which subjects they studied, science, geography, or both, before proceeding to the next query. In Portugal, because Natural Sciences is a mandatory subject across all survey years, this question was deemed unnecessary and consequently omitted.

The data collection took place in the classrooms during school hours. Participation was voluntary and anonymous. The paper surveys were divided by the Life Spheres: School, Home and Broader Society.

At the Life Sphere School, questions revolved around school experiences, such as their like or dislike for the taught subjects, mention of paleontological topics and methods used to do so, their feelings on the topics and peers' interest. The Home Life Sphere explores the impact of the family on the students, such as family members' education and interests, conversations about Science and scientific topics, content available at home and resources used to look for information on palaeontology themes. Within the Life Sphere Broader Society, questions cover media and social media impact, visits to museums, aspirations for Science and Palaeontology careers, and broader societal paleontological experiences.

The surveys took approximately fifteen minutes, and a pen or pencil was used to complete them.

Focus groups are employed to collect information within a group setting, either through a moderator asking predetermined interview questions to participants one by one or by utilising a script to encourage group discussions. Additionally, focus groups enable researchers to capture participants' responses to the comments and viewpoints expressed by others, serving as a means to identify both commonalities and disparities in perspectives (Paradis et al., 2016).

The focus group sessions took about fifteen minutes, with fifteen questions structured around the previously mentioned "Life Spheres" (see Annexe III), and were audio recorded.

The discussions during the focus groups, which the researcher moderated, allowed students to delve deeper into the themes covered in the surveys. They shared personal experiences and opinions regarding Palaeontology engagement in educational settings, at home, through various media platforms, museums and everyday environments. Moreover, students also expressed their thoughts on Palaeontology as a field study, the prospects of becoming a palaeontologist, potential careers in Science, and the presence or absence of role models in the scientific field.

Following the conclusion of the focus groups, transcripts were generated from each recording, excluding any personal or identifiable information. Subsequently, the recordings were eliminated from the electronic device, a step verified by the advisor.

Only students studying Science and/or Geography were part of the study in Ireland. This selection was based on the premise that these students interact with subjects directly relevant to Palaeontology compared to students not enrolled in these subjects. Hence, it facilitates a connection between the influence of school subjects and other aspects of the "Life Spheres" considered in this work.

Physical data was converted to electronic data for graphic representation and thorough analysis. In Ireland all remaining physical data was destroyed after conversion to electronic data and then backed up on UCC supplied OneDrive, where it will remain for ten years. In Portugal, the physical and electronic data, the latter stored in a flash drive, will be kept for three years inside a locked cabinet in the Department of Earth Sciences, Faculty of Sciences and Technology (DCT, NOVA FCT) in Caparica Campus.

All ethical and legal requirements were met per the UCC and the BEES department while collecting data in the Republic of Ireland and approved by the DGE prior to data collection in Portugal. Furthermore, a consent form and an information sheet were distributed to students, teachers and parents/guardians before the research started.

3.1 Surveys

In Portugal, 753 valid surveys were collected in approximately three weeks. The collection took place in the middle of the second semester (March) in a number of public and private schools from the region of Lisbon and Tagus Valey (Figure 3.1). These schools were selected based on prior engagement with the DCT, NOVA FCT programs run by the advisor's team.

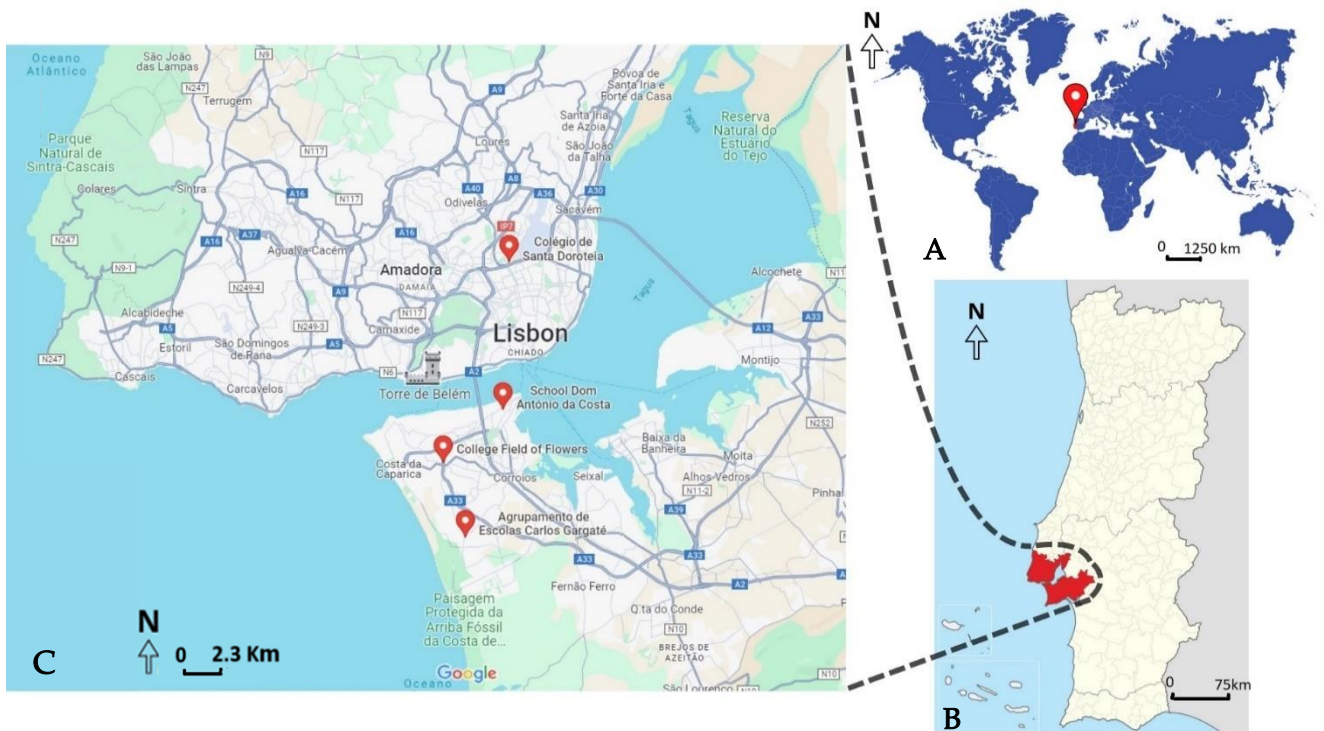


Figure 3.1: Map showing the locations of surveyed schools in Portugal: A, Portugal highlighted on the world map (Map designed by Layerace/Freepik); B, The Lisbon and Tagus Valley regions marked in red (Wikipedia.org); C, A detailed view with red pins indicating the location of the participating schools (adapted from googlemaps.com).

The collaboration occurred in the following schools: Escola Básica 2/3 Dom António da Costa, Colégio Campo de Flores, Colégio de Santa Doroteia, and Agrupamento de Escolas Carlos Gargaté. Table 3.1 shows in detail the number of surveys collected in each school, separated by class and gender.

Table 3.1 Portuguese schools, number of classes and valid/invalid surveys collected.

School:	Escola Básica D. António da Costa	Colégio Campo de Flores			Colégio de Santa Doroteia			Agrupamento de Escolas Carlos Gargaté		
Year Class:	9 th	7 th	8 th	9 th	7 th	8 th	9 th	7 th	8 th	9 th
Male students:	37	50	45	49	36	36	52	26	23	24
Female students:	41	51	46	49	47	39	26	28	20	28
Total of surveys:	78	101	91	98	83	75	78	54	43	52
Number of classes:	4	5	3	4	3	3	3	2	2	2
Total of invalid surveys:	0	6			3			0		
Total of valid surveys:	78	290			236			149		

Surveys with the “Gender” section left blank or marked with options other than “female” or “male” were deemed invalid due to the small sample amount.

The presence of responses to “Gender” other than the usual Female/Male, might have to do with the fact that adolescent gender development involves numerous biological, psychological, and social processes that shape a young person’s understanding of being male or female in a broader social context. During this development stage, the primary focus is on constructing gender identity and roles (O’Sullivan et al., 2001 in Clemans et al., 2010). Simultaneously, adolescents are also developing a more sophisticated understanding of their own sexuality (Clemans et al., 2010).

These surveys were distributed to students in the 3rd Cycle, consisting of 7th, 8th, and 9th classes. For the 7th class, 238 surveys were collected; the 8th class was the smallest sample, with 209 surveys; and the 9th class was the most significant sample, with 306 surveys collected. In total, there were 378 male students and 375 female students.

The variance in survey numbers per class can be attributed to several factors, including school and class availability, class sizes, student attendance, and availability on the data collection day to complete the questionnaire.

As depicted in Table 3.2, the most represented age among the Portuguese participants is 14; however, the ages of students ranged from 12 to 18. Table 3.2 was compiled using information from the valid surveys.

Table 3.2 Age demographic of the students engaged in the study in Portugal. (DNA: Did Not Answer).

Ages	12	13	14	15	16	17	18	DNA
Number of students	166	212	260	80	22	8	1	4

In Ireland, 446 valid surveys were completed during the last week of the school year. The collection of data involved three schools in county Cork (Figure 3.2) selected due to previous contact and engagement with Palaeontology/Geoscience programmes run by the BEES at UCC.

The collaboration occurred in the following schools: Douglas Community School (Boys only), Presentation College Bandon (Girls only) and Coachford College (Mixed). Table 3.3 shows the number of surveys collected in each school, separated by class and gender.

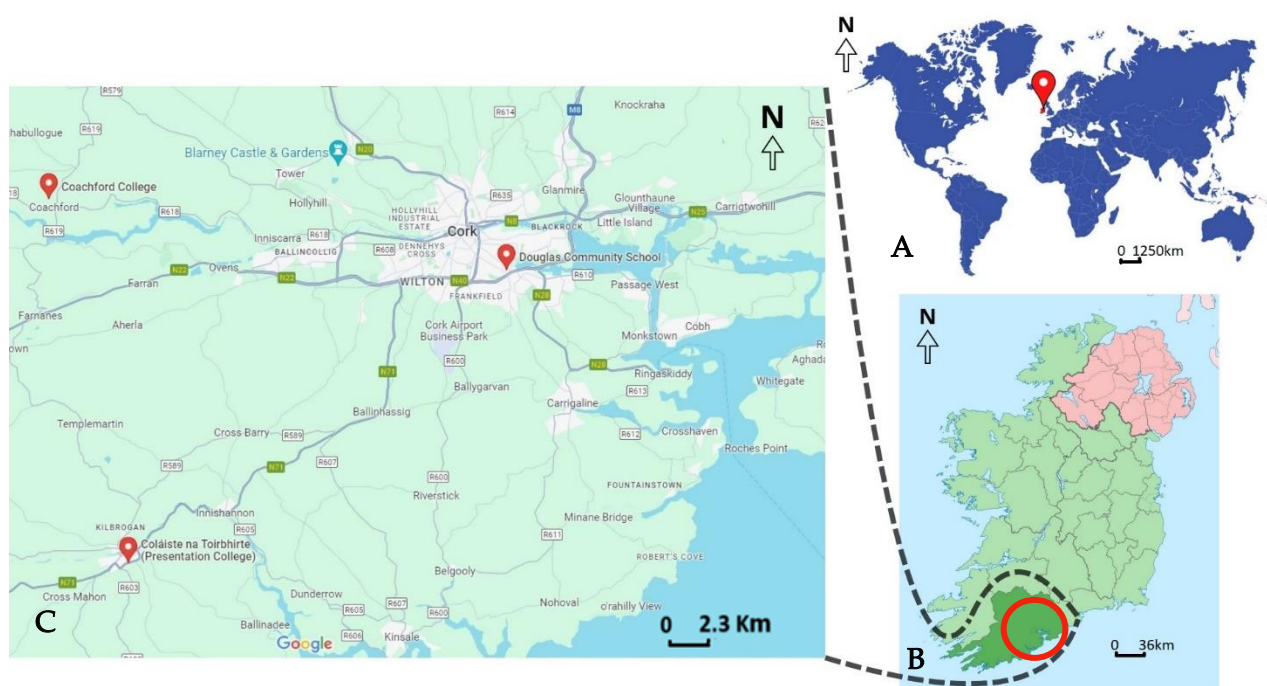


Figure 3.2 Map showing the locations of surveyed schools in Ireland: A, Ireland highlighted on the world map (Map designed by Layerace/Freepik); B, County Cork marked in dark green (Wikipedia.org) with a red circle delimiting the area of the surveyed schools; C, A detailed view with red pins indicating the location of the participating schools (adapted from googlemaps.com).

The surveys were distributed to students in the Junior cycle corresponding to the 1st, 2nd, and 3rd years after primary school. However, due to the data collection occurring at the end of the school year, proximity to the exams limited contact with 3rd year students, and only a sample of 33 surveys were collected compared with 248 gathered with the 1st year students and 165 with the 2nd year students. In total, 248 male students and 198 female students participated in the survey.

Table 3.3 Irish schools, number of classes and valid/invalid surveys collected (n/a: Not applicable).

School:	Douglas Community School			Presentation College, Bandon			Coachford College	
Year Class:	1 st	2 nd	3 rd	1 st	2 nd	3 rd	1 st	2 nd
Male students:	104	68	23	4	5	n/a	29	15
Female students:	n/a	n/a	n/a	65	50	10	46	27
Total of surveys:	104	68	23	69	55	10	75	42
Number of classes:	5	4	1	4	3	1	5	5
Number of invalid surveys:	0			0			3	
Total of valid surveys:	195			134			117	

Similar to Portugal, and as depicted in Table 3.4, the age range of the Irish participants is from 12 to 17, with the most represented students being between 13 and 14. Table 3.4 was compiled using information from the valid surveys.

Table 3.4 Age demographic of the students engaged in the study in Ireland (DNA: Did Not Answer).

Ages	12	13	14	15	16	17	DNA
Number of students	2	185	186	57	6	1	9

As mentioned before, the survey consisted of 33 questions for Ireland and 32 questions for Portugal. However, depending on the response to a specific question, some students might have answered more questions than others. For instance, students who answered “YES” to whether they learned about fossils in school were prompted to answer additional questions about how they learned about fossils and their feelings while doing so. Conversely, students who responded with something other than “YES” could skip these questions and proceed directly to broader inquiries unrelated to learning about fossils in school.

The flexibility of the surveys and their questions allowed the collection of a significant amount of data in both countries in a short period.

Upon data preparation, graphics were created to help visualise, understand, and analyse the data collected through the surveys. Vekiri (2002) states that studies indicate that graphics

serve as effective learning aids when they enable readers to interpret and assimilate information with minimal cognitive effort.

Khan and Khan (2011) also claim that visualisation methods (such as graphics) are significant because they can offer users mental information models. They play a crucial role in rendering vast, intricate datasets more comprehensive. This visualisation technique allows for easy reading of extensive and complex information, permitting an interactive visual representation that leverages human perceptual and cognitive abilities for effective problem-solving.

To analyse the survey data and reach conclusions, a descriptive, univariate, and bivariate statistics approach will be used.

Descriptive statistics offer concise insights into the characteristics and distribution of values within one or more datasets. Classical descriptive statistics provide a rapid overview of central tendencies and the extent of variability in datasets, aiding analysts in comprehending data distributions and making comparisons. Both types of descriptive statistics complement each other. Despite their simplicity in statistical analysis, descriptive statistics play a crucial role in today's era of big data (Lee, 2020).

Univariate analysis is a statistical approach focused on a single variable to summarise or describe that specific variable ([Trochim, 2006; Babbie, 2007] in Sandilands, 2014). It stands in contrast to bivariate analyses, which involve examining two variables, and multivariable analyses, which simultaneously assess two or more variables (Sandilands, 2014).

While univariate analysis plays a crucial role in statistics by providing data summaries and an overall view of the dataset, bivariate analysis will be applied to specific results, particularly in relation to gender and countries.

3.2 Focus Groups

As stated, focus groups were used to collect qualitative data and complement survey information.

Seers (2012) states that qualitative research encompasses a wide spectrum of philosophical foundations and methodological strategies. Each approach possesses its distinct manner of navigating through every facet of the research journey, including analysis.

In qualitative research, the data analysis phase frequently extends well beyond the conclusion of the data collection, often enduring for a considerable period. Once the data has been transformed into a meaningful form, the researcher's adeptness at creatively discerning the findings becomes pivotal for a successful investigation (Jacelon & O'Dell, 2005).

Focus groups were held in Portugal in two public schools (Figure 3.3): Agrupamento de Escolas Carlos Gargaté and Agrupamento de Escolas Anselmo de Andrade.

Two sessions were held per class year, with a total of six focus group sessions.

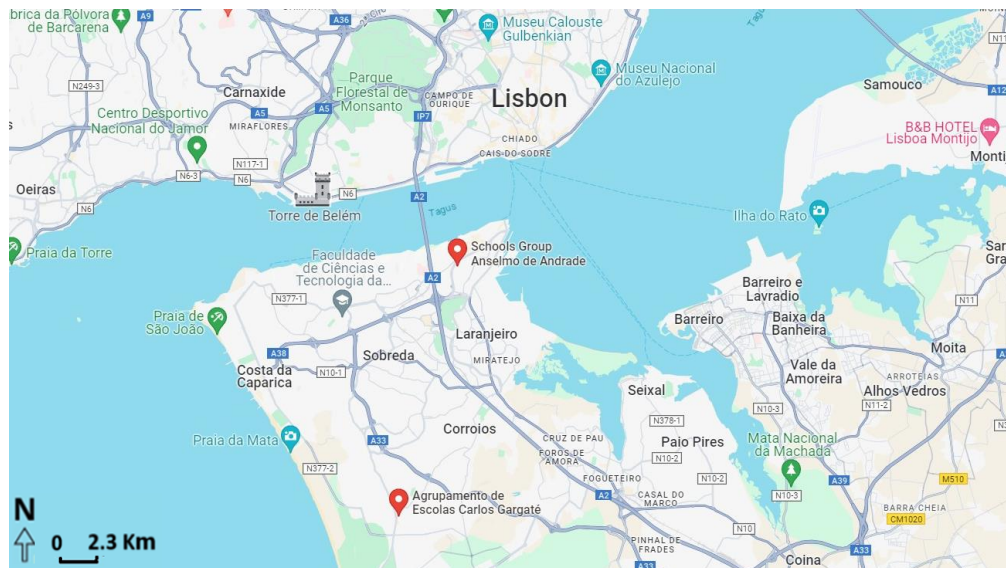


Figure 3.3: Portuguese schools where focus group sessions were conducted are indicated with a red pin (adapted from googlemaps.com).

The number of students who participated in the sessions varied from 5 to 6 participants, encompassing both genders, with the exception of one session involving 7th class girls exclusively. It is also worth noting that the majority of the participants were female.

Similar to Portugal, two focus group sessions were held per class year in Ireland in Coachford College (Figure 3.4). However, due to the reasons already expressed above, it was not possible to conduct focus groups on students in the 3rd year, totalling only four sessions.

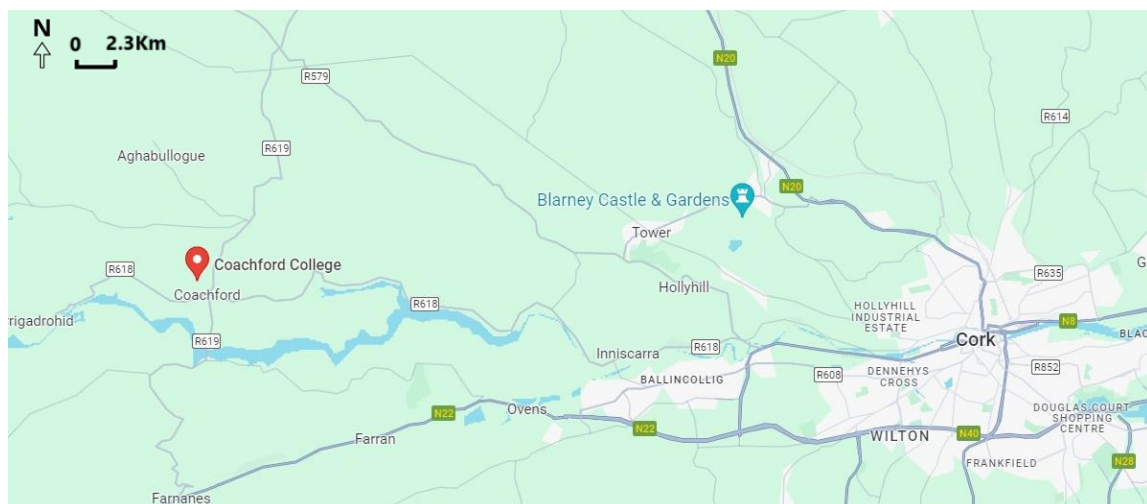


Figure 3.4: Irish school where focus group sessions were conducted is indicated with a red pin (adapted from googlemaps.com).

There were 5 students participating at a time in each Irish session, with the majority being male.

The main goal of the focus groups was to encourage participants to express their thoughts openly and share any personal experiences and beliefs related to the questions and topics discussed. The various discussion points helped gather diverse perspectives on factors influencing students' views on Palaeontology.

4. RESULTS

This chapter will reference graphics in annexes IV, V, VI, VII, VIII and IX. These graphics illustrate the findings categorised by class year, gender and question. Descriptions are provided beneath each individual graphic, highlighting the main differences and similarities found in the results.

Due to the voluntary nature of the surveys, all questions were optional. Nevertheless, the unanswered questions will also be included in the graphical representations to provide an overall understanding and tendency of both answered and unanswered queries.

The phenomenon of non-response has increasingly become a concern in survey studies, thus necessitating additional effort to assess its impact on study results (Mattila et al., 2007).

Response rates are a critical aspect of survey design and analysis, as low response rates can significantly impact the validity of the findings. The sample size represents a large proportion of the population from which data is collected to make inferences about the larger group. In contrast, the response rate refers to the number of complete surveys/answers received. Ensuring the highest response rates can be challenging, especially in extensive population studies. Various factors can contribute to low response rates, including the nature of the survey questions, the length and language used, the target audience's characteristics, the time allowed for survey completion and many others (Phillips et al., 2013).

A pattern was noticed where some questions had more abstention than others. Tables 4.1 and 4.2 below illustrate the percentage of unanswered questions in Portuguese and Irish surveys per section and class year.

Table 4.1 Illustration of the percentage of unanswered questions per Life Sphere of the survey and school year, of the Portuguese sample. The numbers highlighted represent the highest percentage of students who Did Not Answer (DNA) per Life Sphere.

PORTUGAL

Questions	SCHOOL			HOME			BROADER SOCIETY		
	7 th Class	8 th Class	9 th Class	7 th Class	8 th Class	9 th Class	7 th Class	8 th Class	9 th Class
Q1	0%	0%	0%	14.3%	17.7%	12.8%	3.8%	5.3%	4.9%
Q2	0%	0%	0.8%	1.7%	0.5%	2%	5.8%	6.1%	5.3%
Q3	0%	0%	0%	1.4%	0%	0%	6.7%	8.6%	5.6%
Q4	2.1%	0.5%	0.3%	1.6%	2.9%	2.3%	1.7%	3.4%	3.6%
Q5	1.7%	0.5%	0.4%	0%	1.1%	0.4%	1.8%	3.8%	1.9%
Q6	2.2%	0%	1.4%	1.7%	1.4%	2.3%	1.8%	4.4%	1.9%
Q7	10.9%	12.9%	5.9%	1.7%	0.5%	1.6%	2.5%	5.3%	3.9%
Q8	2.9%	0.5%	1.3%	1.3%	0.5%	2.3%	1.7%	4.8%	3.9%
Q9	1.1%	0%	1.9%	0.4%	0.5%	1.6%	3.8%	2.4%	3.9%
Q10				0%	7.7%	1.1%	3.8%	1.9%	2.6%
Q11				2.1%	4.8%	4.3%	0%	0%	13.2%
Q12							0.96%	0.5%	1.2%

As represented in table 4.1, within the sample of Portuguese students, question 7 of the School Life Sphere, question 1 of the Home Life Sphere, and question 3 of the Broader Society Life Sphere had the highest levels of abstention.

Table 4.2: Illustration of the percentage of unanswered questions per Life Sphere of the survey and school year, of the Irish sample. The numbers highlighted represent the highest percentage of students who Did Not Answer (DNA) per Life Sphere.

IRELAND

Questions	SCHOOL			HOME			BROADER SOCIETY		
	1 st year	2 nd year	3 rd year	1 st year	2 nd year	3 rd year	1 st year	2 nd year	3 rd year
Q1	0%	1.2%	0%	10.5%	4.8%	6%	5.7%	3%	0%
Q2	0%	0%	0%	0.8%	1.2%	0%	4.2%	2.9%	0%
Q3	0%	0%	0%	0%	0%	0%	7.3%	5.4%	0%
Q4	1.6%	0%	0%	1.2%	2.4%	0%	3.6%	1.2%	0%
Q5	0.4%	0%	0%	0.4%	0.77%	4.4%	7.4%	6.3%	0%
Q6	0%	1.6%	0%	2%	3.6%	0%	1.4%	3.6%	0%
Q7	3%	1.6%	0%	1.6%	2.4%	0%	3.6%	2.4%	0%
Q8	0%	1.6%	0%	1.6%	1.8%	0%	4.4%	1.8%	6%
Q9	4.4%	0.6%	0%	1.2%	1.2%	0%	7.7%	4.8%	6%
Q10	0%	0%	5.9%	0%	0%	0%	3.3%	1.2%	3%
Q11				4.9%	3.6%	0%	0%	0%	0%
Q12							11.1%	9.2%	7.1%

As illustrated in Table 4.2, the questions with the highest levels of abstention among Irish students were questions 9 of the School Life Sphere, 1 of the Home Life Sphere, and 12 of the Broader Society Life Sphere.

Furthermore, some survey answers were considered invalid for various reasons. Some answers were contradictory (Figure 4.1 A, D, E and F), were not even available as an option in the survey (Figure 4.1 B) and others were not specific enough (Figure 4.1 C).

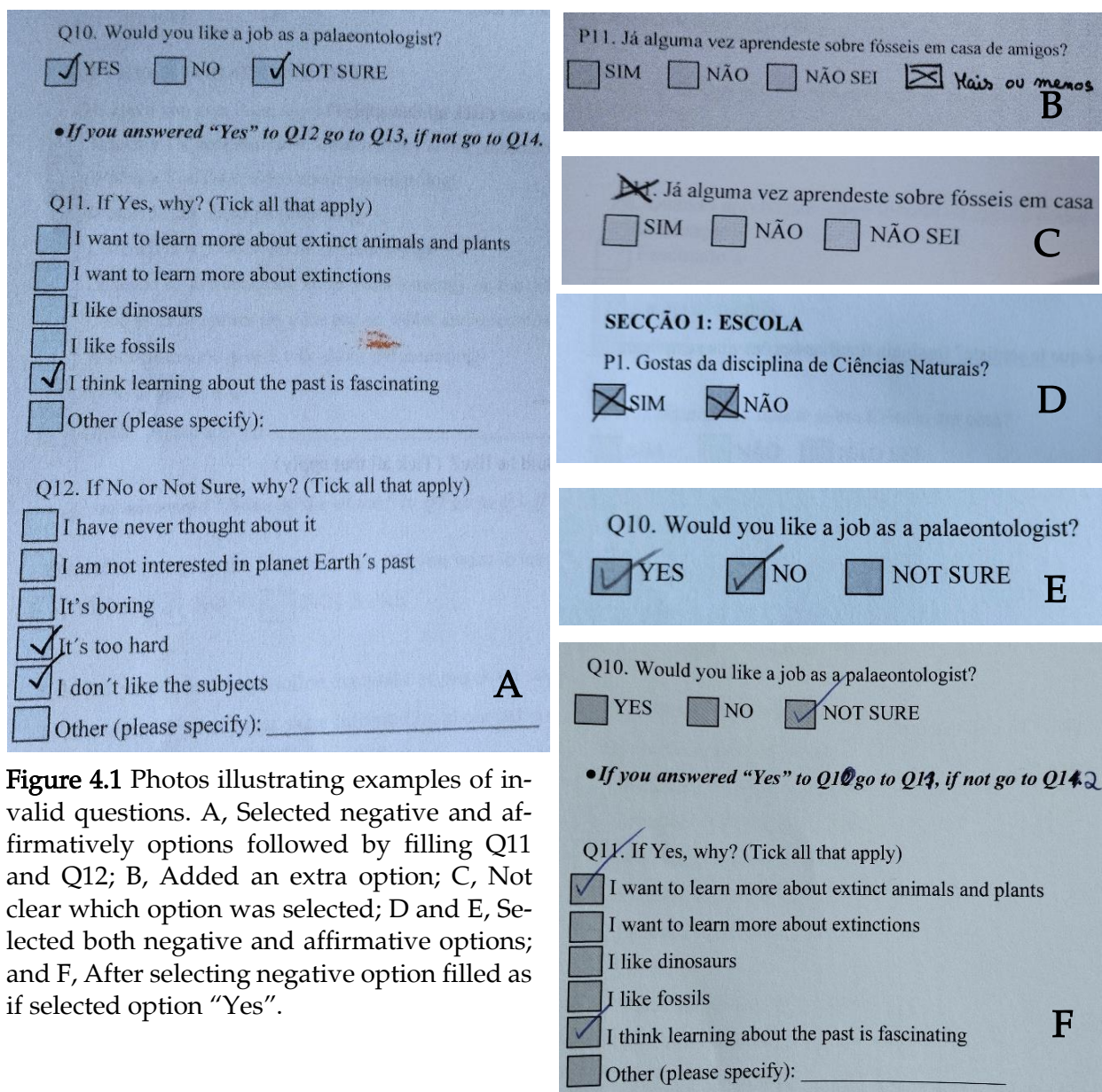


Figure 4.1 Photos illustrating examples of invalid questions. A, Selected negative and affirmatively options followed by filling Q11 and Q12; B, Added an extra option; C, Not clear which option was selected; D and E, Selected both negative and affirmative options; and F, After selecting negative option filled as if selected option "Yes".

Once the invalid and unanswered questions were identified, the data collected from the surveys was analysed, with graphics used for easier readability.

Data analysis is often defined as "the process of breaking down, examining, comparing, conceptualising, and categorising data" (Strauss & Corbin, 1998 in Jacelon & O'Dell, 2005). It is tailored to the research questions and informed by the study's theoretical framework (Jacelon & O'Dell, 2005).

Various methodologies can be employed to extract insights from data. Visual representations may highlight the same features through different perspectives or underscore alternative aspects of the dataset. Each data analysis scenario is unique, precluding the establishment of rigid guidelines. Due to that, data analysis does not follow a linear progression with a set sequence of predefined steps from start to finish. However, it is essential to maintain some form of structure throughout the process (Unwin & Theus, 2006). For this thesis, the data will

be divided by country and section to facilitate comprehension and readability, allowing each response to be accessed individually.

4.1 Findings from Surveys

The subsequent subchapters summarise the graphics representation derived from the survey data. For detailed insights and statistics, refer to the corresponding figures in the annexes cited.

4.1.1. Portugal

4.1.1.1 Life Sphere: School

This section will reference graphics available in Annexe IV.

As demonstrated in previous chapters, schools significantly influence young audiences through the curriculum. Natural Sciences encompasses a comprehensive range of subjects across the three years of the 3rd Cycle, spanning from earth sciences to the study of the human body and health. With such a diverse array of topics, the curriculum is expected to cater to students interested in knowing how the world works.

The survey's first question reflected this since most students from the 7th, 8th, and 9th classes expressed enjoying the subject of Natural Sciences, with a slightly higher percentage of girls than boys.

When asked in question two why they enjoy Natural Sciences, the primary reasons cited are that it is interesting, they like the teacher, and they enjoy the laboratory experiences. Some students also added in the option “Other”, enjoying the subject because they discuss topics such as geology, biology and genetics, astronomy, and oceanography.

A smaller proportion (approximately 20%) of students expressed their lack of enjoyment in the subject of Natural sciences. The primary reasons included the overwhelming amount of information, making it hard, confusing and boring. In the 9th class, students also emphasised the lack of field trips as one of the main factors for disliking the subject. Additionally, some students noted a lack of interest in the topics and dissatisfaction with their teachers as significant influences contributing to their disinterest in learning.

These results display that although the broad curriculum may appeal to certain students, providing opportunities for enjoyable learning experiences, others may find it overwhelming and challenging. Moreover, the influence of teachers emerges in both questions as a pivotal factor shaping students' attitudes towards the subject, underscoring the importance of effective pedagogy in fostering engagement and enthusiasm for learning.

In question number four, the majority of students across the three years answered affirmatively when asked if they had learned about fossils at school. This aligns with the curriculum, which introduces students to fossils in the 7th class.

When asked to provide further details in the subsequent question regarding how they learned about fossils, the predominant responses include using school books, having the teachers discuss the topic in class, and watching educational videos at school. In the 8th and 9th classes, visiting a museum or a fossil site emerged as the fourth notable component.

Furthermore, the next question on the survey aimed to understand whether learning about fossils would impact the students' interest and subsequent feelings. Across all three classes, the most common answer was a sense of curiosity. Among 7th class girls, confusion emerged as the second most significant response, while boys expressed feeling amazed. In the 8th and 9th classes, girls felt bored, while boys commonly reported feeling unaffected (nothing) as their second choice.

A notable trend emerged when delving into whether students' exposure to the topic of fossils prompted them to explore further. For 7th class students, 50% of boys and 46% of girls responded affirmatively, a different trend from the 8th and 9th classes, where the negative responses outnumbered affirmative ones. This suggests that despite the significant emphasis on fossils within the curriculum and the initial curiosity, most do not actively seek out information on the topic.

This discrepancy could stem from various factors, from how teachers introduce the topic and how it is incorporated into the curriculum, to students' individual preferences.

Finally, it was queried about students' friends who share an interest in Palaeontology. The majority of responses leaned towards negation or uncertainty. This suggests various possibilities, including a general lack of interest in the subject, as echoed in previous responses indicating a reluctance to seek out information and subsequently discuss it with peers. Additionally, competing interests may also play a significant part in shaping student's responses.

The last question of the Life Sphere school was focused on students who indicated having friends in school interested in palaeontology and aimed to question whether this friendship influenced their own interests in the subject. Across all class years, the majority answered "No". These results indicate that, at least for this sample of students, while friends may exert some influence regarding certain topics like Palaeontology, individual preferences and inclinations remain primarily intrinsic.

4.1.1.2 Life Sphere: Home

This Life Sphere will reference graphics available in Annexe V.

The primary objective of this Life Sphere was to assess the level of influence family and home resources have on young individuals' interest in Palaeontology.

The first question aimed to determine whether students had any fossils on display at home. Before analysing the findings, it is important to note that, regrettably, no negative option, such as "I don't have any fossils," was available in the Portuguese surveys. This likely resulted in the highest percentage of students abstaining from answering this question across all classes.

Books remain a classic choice throughout all three years, consisting of the majority of responses regarding items featuring fossils. Notably, video games featuring fossils/dinosaurs emerged among boys as the second most common answer, while for girls was decorations. In the "Other" category, students across all classes frequently mentioned toys, school books, films and their personal collection of fossils.

Question number two in this Life Sphere aimed to assess whether there were active discussions at home among family members and friends regarding fossils, thereby determining whether the topic was discussed outside of the school environment. Among 7th class students,

over 55% of the responses were “Yes”. For the 8th class, 47% of boys stated that they talk about fossils at home, compared with only 37% of girls. In the 9th class, the responses “Yes” and “No” were very similar percentage-wise.

This discrepancy may stem from the fact that in the 7th class when students are actively studying fossils, they are more likely to engage in discussions about the topic with their families.

When asked, students indicated discussing fossils at home with their immediate family, like mother, father, and siblings, with grandparents being the fourth most selected response.

Moreover, the question, “Have you talked about science topics at home?” aims to explore whether Science, in general, is discussed within the family, compared with a more specific subject like Palaeontology. Across all classes, the predominant response is “Yes”. In the 7th class, more boys said they talk about science at home compared with girls, while in the 8th and 9th classes, the opposite occurred.

As observed previously, this next question aims to determine with whom students of this age discuss scientific topics at home. Responses highlight the immediate family, with the most selected responses being mother, father, and siblings, followed by grandparents.

The next question on the survey was to determine if anyone in the students’ families had a career in science or was studying science. This is important because, as established in previous chapters, parents' career choices can impact young individuals' preferences.

Across all classes, the prevailing response to this question is “No,” with “Yes” being the second most common response. Interestingly, girls are more likely to have a family member in the scientific field than boys.

The next question on the survey is broader, aiming to understand if anyone in the family is interested in Science. In the 7th and 9th classes, most responses were “Yes”, with more than half of the girls (approximately 60%) reporting having a family member interested in Science. In the 8th class, over 40% of students also replied positively.

Furthermore, when asked, “Is anyone in your family interested in fossils?” The majority of responses were negative (either “No” or “Not sure”) across all students. The participants were also questioned whether they ever spent time researching information about fossils at home, and the predominant overall response was negative.

Among students who indicated searching for fossil-related information at home, Google emerged as the most commonly used resource, followed by books and documentaries. Additionally, YouTube ranked fourth as the most utilised online platform, except for 8th class boys who favoured it over documentaries. Social media platforms such as Instagram and TikTok are also used with variable preferences depending on gender and class year. Some students also mentioned using school books, films, TV series, cartoons, and ChatGPT to learn more about fossils.

Lastly, the final question of this Life Sphere asked if the students had ever learned about fossils in a friend's home. The majority of responses across all years were negative.

4.1.1.3 Life Sphere: Broader Society

This Life Sphere will reference graphics available in Annexe VI.

The Life Sphere of the Boarder Society aimed to understand if factors like museums, social media, and personal interests could impact young people's perceptions of palaeontology.

The first and second questions focused on whether participating in certain palaeontology-related activities would make students more interested in the subject. Although a proportion of students indicated that they never participated in any activity related to Palaeontology, the ones who had most commonly cited watching a television programme, documentary, or film. This was followed by watching a YouTube video, a trend consistent with earlier responses in the Home Life Sphere. The use of apps or games on the phone, tablet, and/or computer was the fourth most common response, with some students noting in the option "Other" visits to museums, reading books, watching videos on the "Escola Virtual" platform, participating in class activities involving fossil identification on the school grounds, and watching paleontological content on the news.

When questioned about whether these activities made them want to learn more about the subject, the majority of responses were negative, except for 7th class girls, where the majority answered feeling interested in learning more about the subject.

The next question on the survey asked if students engaged with online accounts or social media pages that share information about palaeontology. The predominant response was "No," and only a minority of students indicated they followed such content on social media.

Question four focused on museums and whether students have visited museums where fossils were exposed. Most students (more than 65%) across all years have seen fossils in a museum.

Question five required to know with whom students have visited the museum(s). Overall, for 7th and 9th classes the prevalent responses indicated immediate family, with mother, father, and sibling ranking as the top three, followed by school as the fourth most selected. However, among 8th class students school emerged as the predominant response, where it was the top answer for girls (53%) and second most selected answer for boys (52%). This finding emphasises that schools also incorporate museum visits into their educational curriculum.

The next question sought to determine whether observing fossils in a museum sparked students' interest in Palaeontology. More than 30% of students in the 7th and 9th classes expressed that visiting a museum where fossils were exposed indeed piqued their curiosity to delve deeper into the subject. However, among all students, the prevailing response leaned towards the negative, with "No" being the most common answer.

When queried about their perception of a career as a scientist, the most prevalent responses across all years were "Interesting" and "Hard," with the third most common answer varying from gender, with girls saying it is "Exciting" and boys opting for "Technical". Conversely, when prompted about a career specifically as a palaeontologist, the top three answers were "Hard," "Interesting," and "Boring." Some students also added fun and tiring.

The next question aimed to grasp the student's perception of the role and responsibilities of being a palaeontologist. Excavating and preparing fossils emerged as the prevailing choice across all surveyed years. Working in a team and making frequent field trips were also prominently highlighted, with laboratory work ranked fourth in preference, except for 9th class, where girls selected giving lectures and talks and boys drawing dinosaurs and other extinct animals as the fourth most common answer. Additionally, some students selected the option

“Other”, adding that palaeontologists frequently travel and engage in studying the fossils they discover.

The final survey question posed to all students inquired about their interest in becoming palaeontologists. This query aimed to illuminate their future aspirations and the factors influencing their affinity, or lack of, to a career in the field. The predominant response across all years leaned towards the negative spectrum (either “No” or “Not sure”), with less than 10% of the surveyed students expressing a desire to pursue this field professionally.

Additionally, gender disparity was noticeable, with boys showing more interest in becoming palaeontologists than girls.

The motivation to pursue a career as a palaeontologist varies based on gender and academic year. Generally, girls' predominant reasons include a curiosity to delve deeper into extinct animals and plants, a liking for fossils, and a fascination with the past. Boys similarly express interest in learning about extinct creatures and the past and have a particular fondness for dinosaurs.

When asked about their reasons for being unsure or not wanting to pursue a career in Palaeontology, the prevailing response is that they have not previously considered it and dislike the related subjects. Some students selected the option “Other,” with the two most common mentions being a lack of interest in the field and preexisting plans for alternative career paths. A smaller percentage also added a lack of prestige and professional and financial future/stability in the field of Palaeontology, as well as not considering it necessary.

4.1.2 Ireland

4.1.2.1 Life Sphere: School

This Life Sphere will reference graphics available in Annexe VII.

As discussed in previous chapters, the Irish school curriculum includes both Science and Geography as subject components related to the Natural Sciences, whereas the Portuguese curriculum encompasses only one. To initiate this survey, the subjects in which students were enrolled were explored, providing contextual insight for the subsequent follow-up questions.

According to Figure 4.2, more than 90% of students in this study reported being enrolled in both subjects in school.



Figure 4.2 Results on which subjects Irish students study in school.

The remaining questions in the Irish surveys were the same as those in the Portuguese surveys.

The next question queried students about their enjoyment of studying the subjects mentioned previously. The results show that 1st year students, particularly female students (55%), are more likely to not enjoy studying Science/Geography than the rest of the students who participated in the study. Around 31% of 2nd year students and 24% of 3rd year replied negatively.

To the students who replied affirmatively, when asked why they enjoy studying Science/Geography, they cite being interesting subjects, liking the teacher, and enjoying the laboratory experiments. Moreover, 2nd and 3rd year students also reinforced that they enjoy

learning how the world works. Additionally, students also added that they enjoy learning these subjects because they discuss topics such as biology, geology, and astronomy.

Alternatively, students cited several reasons for their lack of enjoyment in Science/Geography, including finding it difficult, confusing, boring, and with overwhelming material to learn. Furthermore, some students noted the excessive study time of such subjects, the lack of enjoyable activities and field trips, and dissatisfaction with their teachers as essential factors contributing to their disinterest in these subjects.

When asked if they had learned about fossils at school, the majority of students across the surveyed years responded negatively. However, 60% of 3rd year female students and over 45% of 2nd year male students reported discussing the topic in the classroom. This suggests that some teachers address the subject despite fossils not being a core part of the Irish school curriculum.

The next question asked the students to provide more details on how they learned about fossils. The top three responses across all years were teachers discussing the topic in class, the use of school books, and the viewing of educational videos at school.

Across the surveyed years, the most common response when asked about their feelings upon learning about fossils, was a sentiment of curiosity. The following feelings varied from amazed to bored to nothing.

When asked whether students' exposure to the topic of fossils prompted them to explore further, 50% of 2nd year girls responded affirmatively, a different trend from that of 2nd year boys and 1st and 3rd year students, where the negative responses outnumbered affirmative ones.

This suggests that although teachers discuss a topic that is not included in the curriculum and despite initial curiosity, various factors may influence student engagement. These factors may include how teachers introduce the topic, the reduced attention it receives due to its exclusion from the curriculum and the student's individual preferences.

Finally, when asked about friends interested in Palaeontology, most respondents expressed either uncertainty or not having any friends interested in the subject. This is except for 3rd year boys, where 74% replied affirmatively.

The last question of the Life Sphere School was directed to students who indicated having friends in school who were interested in Palaeontology. The majority of responses (over 50%) go to "No" or "Not sure". However, more than 40% of 1st and 3rd year male students say that having friends who like Palaeontology makes them more interested in the subject.

4.1.2.2 Life Sphere: Home

This Life Sphere will reference graphics available in Annexe VIII.

This Life Sphere was created to evaluate the extent of Irish families' influence on their youth and the home resources available in Ireland regarding Palaeontology.

The first question focused on understanding if students had any fossils featured in their homes and where. Books and video games, the last one particularly chosen by boys, were the main two items featuring fossils. In the "Other" category, students frequently mentioned toys, TV shows and films.

When asked if there were active discussions at home regarding fossils, most students expressed that they either do not engage in such discussions or do not remember doing so with family members.

To the students who replied that they do talk about fossils at home, when asked with whom they speak, students indicated doing it with their immediate family, like mother, father, and siblings and for 2nd year boys and 1st girls, the fourth most common answer was family friends, compared to 1st year boys and 2nd year girls who were more likely to select grandparents. In 3rd year male students, engaging in a conversation with an aunt or uncle is as likely to happen as with a mother or a sibling.

Furthermore, when asked if they talk about Science at home, most students replied that they do (more than 60%). This contrasts with the previous answer about fossils. This specific case shows that in a more detailed subject like Palaeontology, students are less likely to be involved in family discussions than in a broader subject like Science.

As noted earlier, the next question aimed to identify with whom students discuss scientific topics at home. Responses indicated the immediate family, with mother, father, and siblings being the most selected. The fourth most common answer for 2nd year students and 1st year girls was family friends, except for 1st year boys and 3rd years, who were more likely to discuss the subject with their grandparents.

The next question asked if anyone in the students' families has a career or is studying Science, and the dominant response was "No".

The following question inquired whether anyone in their family was interested in Science. Across all age groups, most responded that they do, with more than half of the girls in 1st and 2nd year (approximately 60%) and boys in 3rd year reporting having a family member interested in Science.

Additionally, when asked if they had a family member interested in fossils, most responses were negative (either "No" or "Not sure") across the surveyed years.

Students were also asked if they had ever researched information about fossils at home, and the majority responded negatively.

Question number 10 in Life Sphere Home focused solely on students who replied spending time at home looking up information on fossils. Across all years, students indicated that they searched through Google. Books were also a common choice for 1st and 3rd year girls and 2nd year male students, followed by documentaries. YouTube ranked the second choice for 3rd and 1st year male students. The social platform TikTok was also highly ranked as a resource across the surveyed years. Some students also mentioned using internet sites and ChatGPT to learn more about fossils.

The final question of Life Sphere Home questioned students about ever learning about fossils in a friend's home. Most responses across all years were negative (over 80%).

4.1.2.3 Life Sphere: Broader Society

This Life Sphere will reference graphics available in Annexe IX.

During the questioning of this Life Sphere, the goal was to identify factors outside the school and home environment that affect Irish students in their understanding and

perspectives of Palaeontology. This includes visits to museums, social media usage and student perceptions of a Science and Palaeontology career.

In the first question, a considerable proportion of Irish students (over 30%) say they have never participated in any activity related to Palaeontology. The ones who had usually reported watching a television programme, documentary, or film. This was followed by watching a YouTube video, and using apps or games on an electronic device was common among boys. Some students added the option "Other" which included visits to museums, reading books about the subject, having conversations with family members, watching TikTok videos, and one student mentioned visiting the Valentia Trackway in County Kerry, Ireland.

When asked if these activities increased their interest in learning more about the subject, most responses were either "No" or "Not sure." Except for 3rd year girls, 50% of whom agree that participating in such activities sparked their interest in Palaeontology.

The results from question number three show that about 70% of students do not engage with online accounts or social media pages sharing information about Palaeontology.

The next question asked students if they had ever seen fossils in a museum. The results demonstrate that most Irish students have, in fact, seen fossils inside a museum.

Similar to previous queries, question five required students to indicate with whom they visited the museum/s. The predominant response indicated immediate family, with mother, father, and sibling ranking as the top three choices. Interestingly, the school ranked the fourth most common answer among 1st year students and 3rd and 2nd year boys as an entity contributing to young people's museum visits.

In the following question, more than 55% of boys reported that seeing fossils in a museum does not make them more interested in the topic, an idea shared by most 1st year girls. However, 44% of 2nd year girls and 56% of 3rd year girls say that visiting a museum where fossils were exposed indeed piqued their curiosity to delve deeper into the subject.

When inquired about their idea of a career as a scientist, the predominant responses were "Interesting" and "Hard," followed by "Technical" and "Exciting". Some students added that it could be an exhausting job due to long hours. Equally, when encouraged to reply to a similar question related to a career as a palaeontologist, the three predominant answers were "Hard," "Interesting," and "Boring." Some students also added fun and amazing.

When asked about the responsibilities of a palaeontologist, most students agree it would be primarily excavating and preparing fossils. Working with a team was the second most selected by 1st, 2nd and 3rd year male students, while 1st and 2nd year girls selected giving lectures. For 3rd year girls working in the laboratory ranked second as the most selected workplace of a palaeontologist. The laboratory was also selected, and the third most common answer among 1st years, as drawing dinosaurs and other extinct animals and working in a team, was by 2nd year girls. Working in museums and as part of a team were the third most selected among the 3rd year girls, and making frequent field trips was a common answer among 2nd year male students and 3rd year students. Additionally, some students selected the option "Other", adding that a palaeontologist job would be similar to the ones portrayed in TV shows and films.

When asked about their interest in a career as a palaeontologist, the majority of participants responded negatively (either "No" or "Not sure"). Less than 16% of the students who responded to this question wanted to pursue this career.

Additionally, it was noticed that a similar percentage of girls and boys were interested in becoming palaeontologists.

Students who are motivated to pursue a career as a palaeontologist mostly do it because they want to learn more about extinct animals and plants. Some other common answers among 3rd year girls are liking fossils, and liking dinosaurs for 1st year boys and 2nd year students. Thinking that learning about the past is fascinating is among the most selected options in 1st and 2nd year students. Boys tend to want to know more about extinctions than girls.

When asked why they were unsure or uninterested in pursuing a career in Palaeontology, the dominant response across all years was that they had not previously thought about it. Additional reasons include considering it a boring and hard profession and disliking the related subjects. Some students choose the option “Other,” citing a lack of interest in the field and preexisting plans for their careers, with some girls adding that they do not exactly know what Palaeontology is and what a palaeontologist does, while others believe that there are better scientific areas as well as not considering it necessary.

The findings above highlight the data collected between Portuguese and Irish students who participated in this study. The results are detailed more comprehensively in the graphics presented in Annexes IV, V, VI, VII, VIII, and IX. Nonetheless, the succinct paragraphs in this chapter summarise the outcomes derived from 1199 surveys conducted among students in private and public schools in the region of Lisbon and Tagus Valley in Portugal and county Cork in Ireland.

4.2 Insights from Focus Group Discussions

This chapter delves into the insights obtained from the focus groups. This methodology was employed to gather qualitative data and probe deeper into questions that the surveys alone could not address.

As will be observed during the analysis, the variability of the questions corresponded to the level of student engagement and the nature of their responses. Certain answers prompted more targeted inquiries, while others did not necessitate further elaboration. Consequently, the progression of focus group sessions unfolded organically within the context of the subject matter, with not all questions being posed uniformly across all groups.

The analysis based on the focus group results will be categorised by country and subsequently some of the findings will be compared in a later chapter.

4.2.1 Portugal

In Portugal, two focus groups per class year were held in two different schools, Agrupamento de Escolas Carlos Gargaté and Agrupamento de Escolas Anselmo de Andrade. Female and male students participated in groups of 5 to 6 students per session. The transcription of each focus group is available in Annexe X.

The starting question in each session was “What do you think Palaeontology is?”. Most students replied that it is the study of fossils, “past remains” and “ancient things”. They also had the opportunity to elaborate on fossils, with the most common answer being the remains

of dinosaurs and other living beings, like plants. "Marks" and "animal remains" were also typical responses.

The students were also questioned about their understanding of the role of a palaeontologist, aiming to grasp further into their perception of Palaeontology. The predominant response highlighted the study of fossils, with one 8th class student adding, *"Travels around the world to study them (fossils) because in certain places there was a species that did not live in other places, so he/she as to travel the world to study and find them"*. Additionally, students mentioned tasks such as working in museums, doing laboratory work and fieldwork. 7th class students particularly associated palaeontology with fieldwork, emphasising excavation activities. However, the majority of students recognised the interconnectedness of field and laboratory work in fossil studies, noting, *"It starts on the field and then goes into the lab to study the fossils they removed from the field"* (8th class student).

During the sessions, students were questioned about their enjoyment of studying fossils in school. Many responses stated, "It depends", and expressed mixed feelings like *"It was cool, but also had some pros and cons"* (8th class student). Notably, the preferences revolved around the subject matter, as highlighted by one 7th class student, *"This year, when the teacher spoke about living fossils in class and showed a fish, I thought that was really interesting and went home and looked up more living fossils"*. One student from the 9th class mentioned, *"The teacher showed us fossils on the school stairs"* when asked if they had enjoyed it, the reply was positive, *"I was surprised, I did not know there were fossils there!"* (9th class student).

The methods used to teach specific topics in Natural Sciences can also impact student's interests. During a discussion with a 7th class focus group, students shared their experience completing a "Time Scale" activity in class. When questioned about it, they explained in great detail the process of arranging animals and plants on a time scale. The researcher then asked, *"Are you enjoying doing this Time Scale?"* to which the students responded, *"Yes, it's fun!"*. One student added *"Is better than doing a test!"*.

The next question related to visits to museums or fossil sites with family, friends, or school. The most common response was affirmative, with two students citing visiting natural history museums with their families outside the country, in London and Scotland, and many other students visiting in Portugal the Pavilhão do Conhecimento in Lisbon and DinoPark in Lourinhã. They enjoyed the experience and noted that certain aspects sparked their curiosity, prompting them to delve deeper into what they learned during their museum visits. For instance, a 7th class student remarked, *"I liked it so much, I went there more times after that"*.

When the researcher inquired about whether visiting DinoPark or a museum provided a new or different learning experience compared to school, the predominant response was "Yes". A 9th class student remarked, *"When you go to a museum, there is more information than in school"*, and an 8th class student added, *"It depends if you have a guide explaining everything to you, than going alone, (...) we do not know things"*.

Regarding this particular answer, the researcher asked whether learning about a specific subject in a museum is preferable to learning it in school. The response was, *"It depends. If the museums are more interactive, it's better; if not, there is no point"* (8th class student). The researcher's follow-up question was, *"So, if Science museums were more interactive, would you enjoy it more?"* to which the students replied, *"Exactly, we are the ones to explore"* and *"Yes, we are children, after all!"* (8th class students).

All the students who have visited museums echoed this sentiment. When questioned about their experiences, the prevailing responses revolved around the activities they engaged in at the museums compared to what they were exposed to and learned.

When questioned about discussing Science at home, several students expressed enjoyment, particularly when their family members have a background in Science. *"I love coming home from science class and starting a conversation with my parents, who understand what I am talking about"*, shared a 7th class student. Further inquiry revealed that most students mentioned their father and/or aunt/uncle as family members with whom they discussed Science.

The following inquiry focused on the resources students utilise regarding palaeontology, including films, books, documentaries, social media, etc.

The majority of students mentioned "Jurassic Park" as their first response, while others cited books, encyclopaedias, National geographic programs, personal fossil collections, excavation material for play and TV series/cartoons. When asked whether having access to those resources and engaging in the previously mentioned activities (e.g., creating a fossil collection or playing with the excavation kit) sparked their interest in learning more about palaeontology, the response was often, *"It depends."* Upon further inquiry, it became apparent that their reasoning largely revolved around how the subjects were being discussed or presented. For instance, one 7th class student commented, *"Depends about who is explaining and why, sometimes I am interested, sometimes I am not"*.

This aligns with the discussion held about the museums, indicating that interactive programs tend to engage young people more than purely expositional ones.

The next question prompted students to share their preferences regarding films or other media related to palaeontology. Nearly all focus group participants mentioned "Jurassic Park" or "Jurassic World", with two 7th class students adding, *"I like it because they eat people."* Cartoons such as "Dinosaur Train" and "Camp Cretaceous" were also mentioned.

When asked whether they observe aspects of palaeontology in their everyday lives, the most relevant answer is "Yes," with students mentioning sightings of Jurassic Park-themed T-shirts or residing near fossil-rich locations such as beaches or cliffs. One 9th class student shared, *"I have fossils. They came from Canada. My uncle was there and brought me some"*.

Students also mentioned seeing fossils in public places like the local areas of Cacilhas and Mata dos Medos and visiting a fossil track in the region of Leiria. Identifying fossils on the beach was also a common remark among 8th and 9th class students *"For example when a go to the beach (...) I see shells inside rocks (...)"* (8th class student).

The next question was, "Do you think palaeontology is important?" to which most students responded affirmatively. 8th and 9th class students elaborated on the significance, stating that understanding the past is crucial as it informs our understanding of the future, with one 8th class student adding, *"One step back, two steps forward"*. 7th class students highlighted the importance of knowing previous species and understanding Earth's past conditions, with one mentioning, *"So we know which species lived before us and what the planet was like"*.

Students who consider palaeontology unimportant often describe it as boring and add that some subjects might be essential, but others are not.

Finally, when asked, "Do you have anyone who encourages you to know more about Science?" some students responded, "Yes." In an 8th class focus group, names like Thomas

Edison and Marie Curie were cited as their Science role models. In another focus group of 9th class students, their science teacher was mentioned *"I started enjoying Science the moment she became our teacher."*

However, it did not seem imperative for many students to pursue a career in Science. Most indicated that they already had a clear career path in mind from a young age, such as informatics or engineering. Others had not fully decided but were considering Science due to its perceived professional and financial benefits.

When questioned whether what they learned in class inspired them to pursue a career in Science, the majority responded: "No", some elaborating, *"It makes me want to know more, but not like a career"* (7th class student).

4.2.2 Ireland

The focus groups in Ireland were conducted at Coachford College in County Cork. Female and male students actively participated in groups of 5 students per session. The transcription of each focus group is available in Annexe XI.

To the first question of the session, "What do you think Palaeontology is?" most students replied that it is the study of fossils, "dinosaur bones", and ancient and extinct life. Once asked to elaborate on the word "fossils", the most common answer was the remains of dinosaurs and extinct animals, organs, bones, tracks and plants.

The students were then questioned about their understanding of the role of a palaeontologist. The most predominant response was that palaeontologists worked primarily in a laboratory environment. After being questioned about who performed the excavating of the fossils, one student replied, *"The builders"* (2nd year student). Additionally, some of the 1st year students mentioned that working as a palaeontologist would be working as part of a multidisciplinary team: *"They research different remains (...) try to figure out what period it's from, and then discuss with different scientists so they can put together a story of what happened"* (1st year student), including historians *"They probably also work with historians to kind of give an idea of what, let's say, animals would have been around there to identify what (...), birds nest (...) to see if they were extinct or if they are still around at that time (...)"* (1st year student). The same group cites the job of archaeologists, saying that the archaeologists either did the excavating part of the job *"So if the palaeontologist is in the lab, who do you think excavates the dinosaurs?"* (researcher) *"That might be an archaeologist or something like that"* (1st year student), or they work alongside palaeontologists in fossil sites, comparing one to Pompeii *"In, like, History, where we learn about, like bread that was in the oven of ancient Roman...Pompeii, (...) would that be a fossil?"* (1st year student). Moreover, some students also mentioned that work in palaeontology would be *"looking at dinosaurs through the microscope"* (1st year student).

Despite this, some students say palaeontologists have to do a mix of fieldwork and laboratory work. *"(...) you are probably called to the field, and then what you find, you bring to the lab, and you kind of... study it"* (1st year student).

During the sessions, students were questioned if they had ever talked about fossils in school. The majority of the responses were "No", with a group of 1st years saying *"A bit in History"* and 2nd year students mentioned that they talked about *"Dating them, like carbon 14"* and another student added *"And like fossil fuels"*.

To the students who replied that they have learned about fossils in school when prompted to give their feedback on their feelings, the 1st year students said it was interesting, *"I found it quite interesting"*, and when asked if that was enough to make them want to go home and find out more about the subject, the answer was, *"It depends on what (...) it was about. (...) if we were told more and I wanted to find out more then I would"* (1st year student) with another student adding *"A lot of my friends like hearing about this kind of stuff, so we have different discussions on science, history, geography, and all different topics. And we usually go home and talk about it to family members"* (1st year student).

The next question was related to visits to museums. The most common response was affirmative, with students citing that they visited Natural History Museums with their families in Dublin, London, Rome, and others participants adding that they did visit museums with fossils but cannot remember where or with whom. When asked about their experiences, some said that they found it *"Interesting"*, *"Kind of cool"*, and *"Curious"* (2nd year students), with one student from 1st year adding, *"(...) the big skeletons were cool!"*. However, seeing fossils in a museum was not enough to spark their interest in the subject. When asked if, after visiting the museum, they wanted to learn more about fossils, most replies were of irrelevance, *"Let's move on"*, and *"I didn't really think much of it"* (2nd year students). When asked if museum activities, like games, would make them more likely to enjoy the visit, a 1st year group reported, *"I feel like (...), you would get more focused on the game instead of the animals, and you would be like, oh! I have to win. (...) Well, then if you are given time to actually look at the plaques and stuff like that, you definitely retain a lot more information"* with another student adding, *"I think if there is a visual of, let's say, what it looked like (the extinct animal) Yeah, that would be a lot better"* (1st year students).

When asked about resources they have at home that feature palaeontology, most students mentioned *"Jurassic Park"* and *"Jurassic World"* films with *"Ace Age"*, also a common mention after the researcher referenced it during the sessions. Others cited documentaries and books: *"I have this book, (...) about different women that changed the world, and one of them did fossils (Mary Anning)"* (1st year student) and *"I read a book by Richard Darwing or something"* (2nd year student).

When asked if watching these films or documentaries or reading the books was for learning or entertainment proposes the majority of students said it was mainly entertainment, with one student reporting, *"A bit of both (...). Like it depends on the actual kind of show"* (2nd year student).

Most students also said they did the previously mentioned activities at home with or without their families present.

Upon enquiring about whether they observe aspects of palaeontology in their everyday lives, the most relevant answer is *"Yes"* with students mentioning Jurassic Park-themed T-shirts, ammonite images or posters in the school science room or their own room *"I used to have a really old poster when I was young, it was every single dinosaur, and it actually had the explanations, diet, habitat, natural behaviour (...)"* (1st year student).

In response to the question *"Do you think palaeontology is important?"* most students responded affirmatively. When asked to elaborate, many cited its significance in providing insights into the past, such as one 2nd year remarked, *"We could learn from it and move forward"*. Another 2nd year emphasised that palaeontology offers knowledge that would otherwise be unobtainable, saying, *"It kind of helps us learn about like past animals and plants"*,

and one student highlighted the curiosity some extinct animals spark "*They (Dinosaurs) are interesting creatures (...) could be helpful for people that don't know*" (1st year student). Some 1st years students also linked the importance of the study of Palaeontology with climate change, with one suggesting, "*It would help (...) kind of foresee what might happen (...)*" and another one added, "*(...) the more we learn about the past, and how the different animals reacted with each other, and kept each other balance, it would help us rebalance the planet now*".

Students who consider Palaeontology unimportant often describe it as a waste of time.

When asked, "Do you have anyone who encourages you to know more about Science?" for 1st years, most of the responses were "No" with some 2nd year students reporting having close family members (such as mother, father, or cousin) who are scientists or have a strong interest in Science. When probed further about discussing Science at home with these family members, some students affirmed that they engage in such discussions, while the majority indicated that they do not.

Finally, when questioned about a future career in Science, most students who participated in the focus groups preferred pursuing careers in business or accounting. Many pupils perceive the field of Science as filled with uncertainties, mostly due to theory testing and proofs. According to one 1st year: "*I would prefer to go into finance (...) or the business kind of route. Instead of (...) going to Science, because it's a lot of unknowns (...) testing theories*" another student added, "*I feel like you would get a bit frustrating if you could not find anything*" while a third commented "*I feel like a lot of people this age want something that they can rely on for stability and stuff like that*" (1st year students).

As demonstrated in this chapter, the focus group sessions in Ireland and Portugal produced responses consistent with the survey results and added additional insights into the factors influencing young people's attitudes and interest towards Palaeontology.

5. DISCUSSION

The next chapter focuses on undertaking a comparative analysis between the results from Portugal and Portuguese students and Ireland and Irish students, unveiling insights into the nuances of their interests and paleontological perceptions. Although both nations demonstrate a dedication to educational pursuits in Science, variations in curriculum, school objectives, logistical necessities, and governmental emphasis on scientific public institutions inevitably shape the trajectory of their endeavours.

Before proceeding to the next subchapter, it is crucial to highlight that the comparison will be limited to Portuguese students in 7th and 8th class and 1st and 2nd year Irish students. This restriction is due to the insufficient sample size of 3rd year Irish students (n=33) relative to the sample size of 9th class Portuguese students (n=306), which precludes a statistically reliable comparison.

Additionally, it was initially intended to compare Portugal and Ireland by individual class years. However, during the writing and analysis of the chapter, the similarities observed within school years proposed a broader comparison between the two countries. It is important to note that the Portuguese and Irish samples are very similar in size. Consequently, including additional data from the 9th class and 3rd year would only introduce discrepancies in sample size without contributing meaningful insights to the comparison.

5.1 Comparing countries

5.1.1 The curriculum

As a platform for knowledge construction, the curriculum mirrors the intentions outlined in a specific curricular policy, formulated based on conflicts, compromises, advancements, and setbacks. These aspects are the organic manifestation of a document that should be perceived as both a text and a discourse crafted for and from a regulated practice of power (Paraskeva, 2000 in Ferreira, 2007).

The curriculum, a cornerstone of education, plays a pivotal role in guiding teachers in their class preparation, as well as structuring and setting academic goals for the year.

In Portugal, the study of Earth Sciences was initially introduced in the 5th class, with a continuous learning process that extends to the 6th, 7th, and 8th classes (DGE, 2018).

In Ireland, according to the National Council for Curriculum and Assessment, the Department of Education & Skills and the Government of Ireland in Junior Cycle Geography Curriculum Specification (2017), the interconnectedness of the curriculum is evident,

especially inside the subjects themselves, where the subject of Geography is intertwined with Geology. During the teaching of this subject, various geology-related topics are addressed, such as in Strand one, “Exploring the physical world”, where students learn to:

- Describe the formation and worldwide distribution of volcanoes, earthquakes and fold mountains within the framework of plate tectonics and Earth’s structure
- Distinguish between various categories of rock types based on composition and formation
- Analyse the processes and impacts of weathering and mass movement on the Irish landscape

Despite some differences between the two countries, significant similarities were found, particularly when asked what makes them enjoy or dislike the subjects of Natural Sciences in Portugal or Science/Geography in Ireland, as shown in Figures 5.1 and 5.2.

When asked why students enjoy studying the subjects mentioned above, as seen in Figure 5.1, the primary reasons cited are that it is interesting, they like the teacher, they like to know how the world works, and they enjoy laboratory experiments. This last reason proves that hands-on experiences allow students to learn and understand much easier while also enjoying the process. Over the past decades, laboratory work and other hands-on activities in school science have garnered significant attention ([Lazarowitz & Tamir, 1994; Lunetta, 1998; Millar et al., 2002; Hofstein & Lunetta, 2004] in Högström et al., 2010). It is argued that engaging in laboratory work aids students in grasping scientific concepts while boosting their interest, motivation, practical skills and problem-solving abilities. Furthermore, it is suggested that laboratory work facilitates student’s comprehension of science, scientific methodologies, and the relevance of science to everyday life ([Hodson, 2001; Johnstone & Al-Shuaili, 2001; Hofstein & Lunetta, 2004; Millar, 2004; Lunetta et al., 2007] in Högström et al., 2010).

Some students added that they enjoyed learning about Natural Sciences and Science/Geography because they learned about the human body and general biology, geology, astronomy, the history of planet Earth and oceanography.

Why do you like about studying this subject?



Figure 5.1 Results on why Portuguese students enjoy studying Natural Sciences and Irish students enjoy studying Science/Geography.

As in Figure 5.2, the main reasons for the student's lack of enjoyment in the subjects included the overwhelming amount of information, being complex, confusing, and tedious. Moreover, some students noted the excessive study time of such subjects, the lack of enjoyable activities and field trips, and dissatisfaction with their teachers as essential factors contributing to their disinterest in these subjects.

Why don't you like about studying this subject?

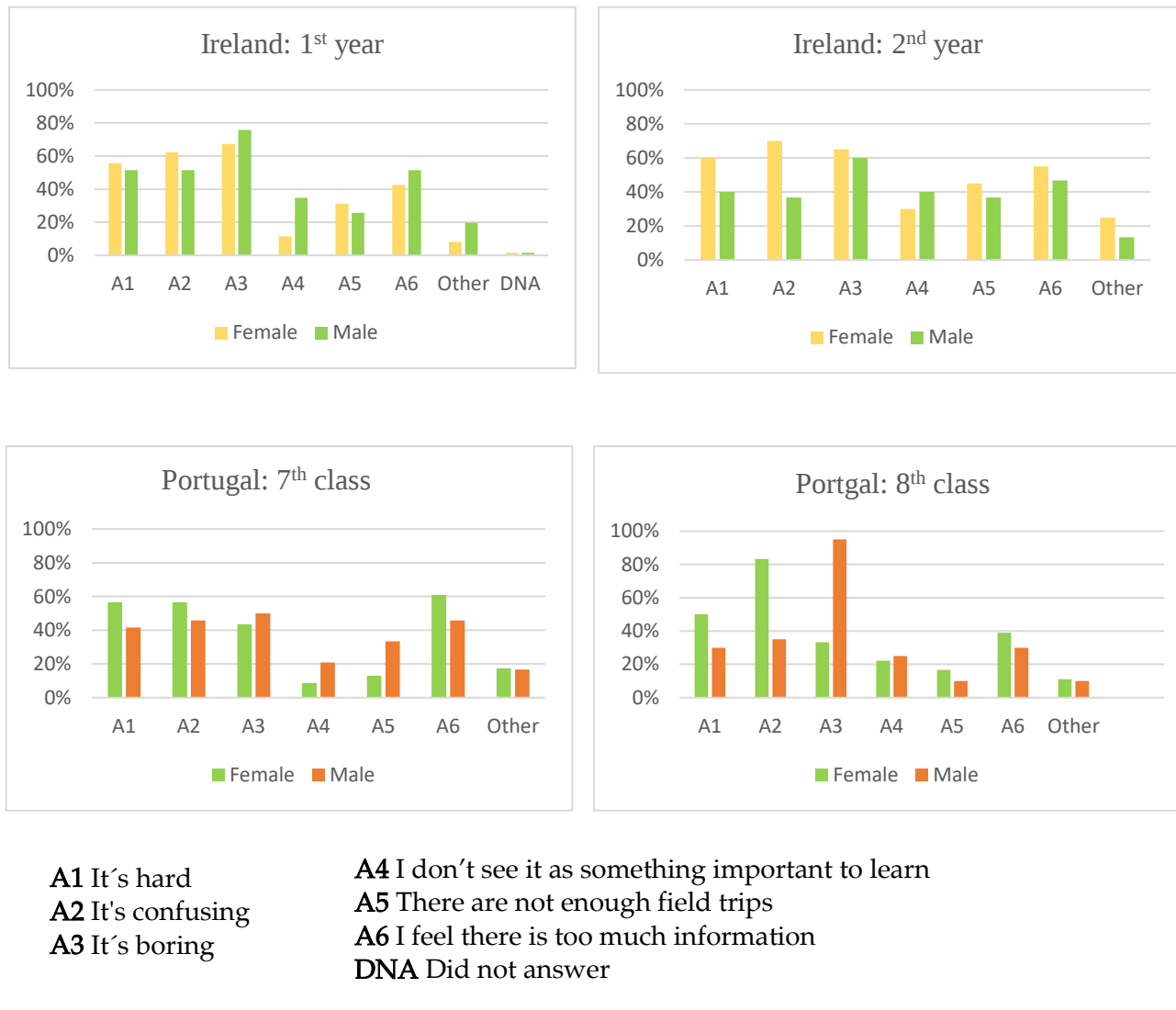


Figure 5.2 Results on why Portuguese students do not enjoy studying Natural Sciences and Irish students do not enjoy studying Science/Geography.

It was observed that students' enjoyment or lack thereof in the subjects mentioned is significantly influenced by their preference or dislike for the teacher. The fondness for the teacher is a factor that makes students enjoy the subject. It is essential to emphasise that within the school setting, it is suggested that teachers and their support to students play a crucial role in ensuring a positive alignment between the student and the school ([Eccles et al., 1993; Deci, 2009] in Quin et al., 2018).

It is fundamental to understand what creates enjoyment for students in the classroom because the highest levels of motivation, engagement, learning and well-being will be found in classrooms and schools where the climate emphasises and offers opportunities for students to experience autonomy, competence and emotional support. In such classrooms and schools,

students would have a say in how the classroom operates and the types of assignments given, enabling all students to succeed in required academic and social tasks ([Zimmer-Gembeck et al., 2006; Niemiec & Ryan, 2009] in Eccles & Roeser, 2011).

In Portugal, as per DGE (2018), Paleontological topics are introduced in the 3rd Cycle, for the first time in the 7th class, with the subtheme “Earth Tells its Story”, where students learn to:

- Identify the main stages of fossil formation and establish possible analogies between them and the real context in which these phenomena occur
- Explain the contribution of studying fossils and fossilisation processes in order to reconstruct the history of life on Earth
- Differentiate historical time from geological time in diverse documents
- Valuing knowledge from other disciplines (e.g. History)
- Clarify the principles of geological reasoning and relative dating and recognise their importance for characterising the main stages of Earth’s history

As perceived in a previous chapter, the Portuguese Natural Sciences curriculum is articulated with other subjects such as History, Chemistry, and Geography. Over the course of three years, students learn to interconnect these subjects, as knowledge in disciplines like Palaeontology must be linked to various other subjects.

However, in Ireland, the curriculum does not mention Palaeontology or closely related topics, highlighting the students' lack of knowledge during Junior Cycle. This is evidenced by the focus groups, where students believe Palaeontology, a multidisciplinary science, collaborates with archaeologists and historians in order to articulate a picture of past environments and animals. Also evident in some sessions of the focus groups and some comments in the surveys was the mention of fossils in History class. After a brief analysis of the Junior Cycle History curriculum, it was noticed that Strand one, “The nature of history”, *“helps students to acquire a “bigger picture” of the past and an understanding of the importance of evidence that will enhance their historical consciousness”* (National Council for Curriculum and Assessment, Department of Education & Skills and Government of Ireland – Junior Cycle History, 2017, p.16).

Although the History subject was not a focus of this research and, therefore, not explored in detail, its mention by a few students during the data collection suggests an unexplored area that might have helped identify more factors that could influence students' attitudes towards the past and Palaeontology. Further investigation into this aspect would be valuable.

It is also worth mentioning that during the data collection, it was possible to notice that some students, although it is impossible to know how many, confused the word “fossils” with “fossil fuels”. When noticed, the researcher had to correct the students a few times during the process. This might be because within the subject of Science in strand two, “Earth and Space”, in the strand element “Energy”, students learn about renewable and non-renewable energy sources, where they discuss fossil fuels (WorldWiseGlobalSchool, 2020). Fossil Fuels are also mentioned in Primary Schools as part of the fifth and sixth year Geography curriculum (Department of Education and Science, 1999).

These aspects might have caused the Irish results seen in Figure 5.3, where a significant percentage of students say they discussed the topic of fossils in school.

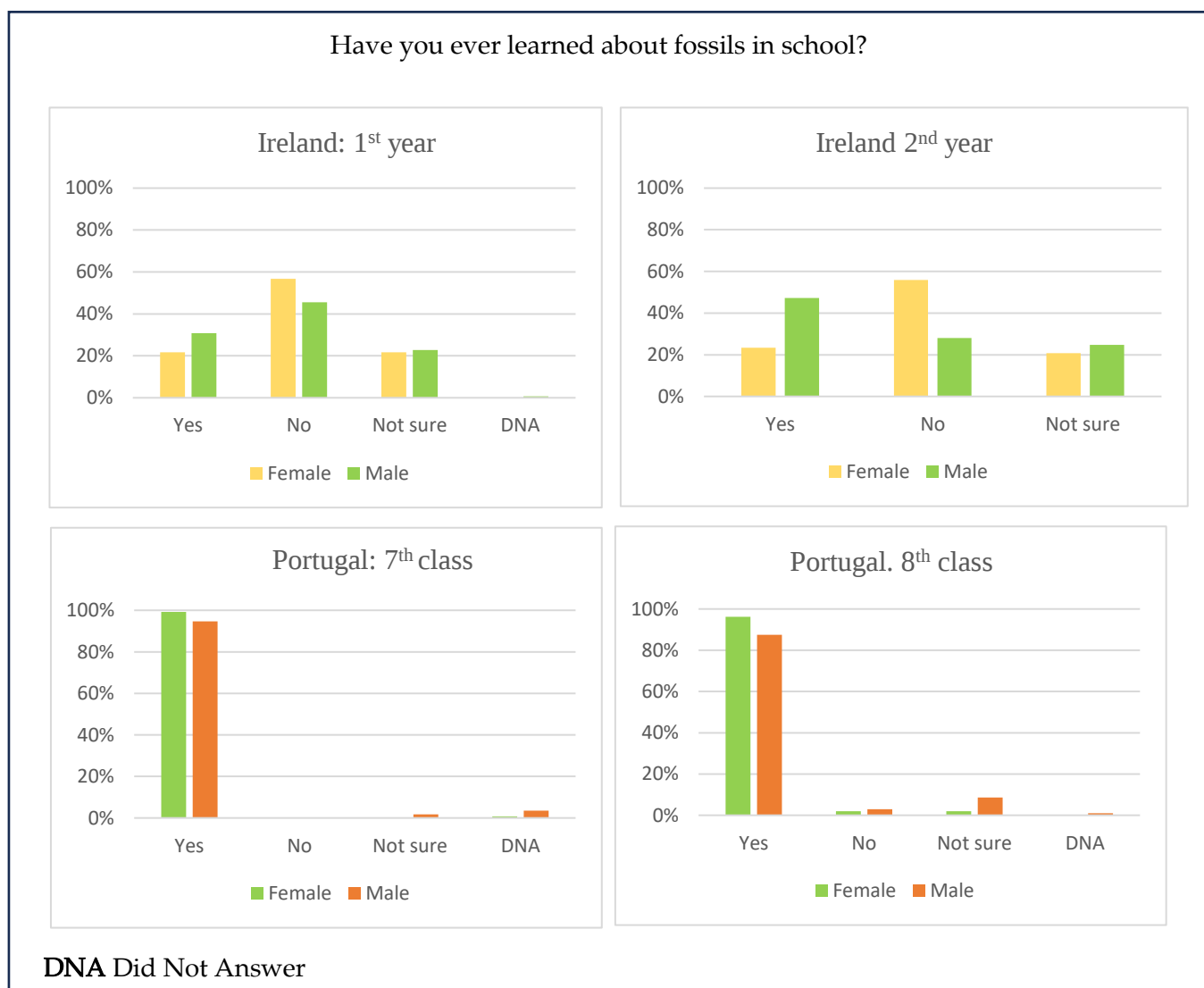
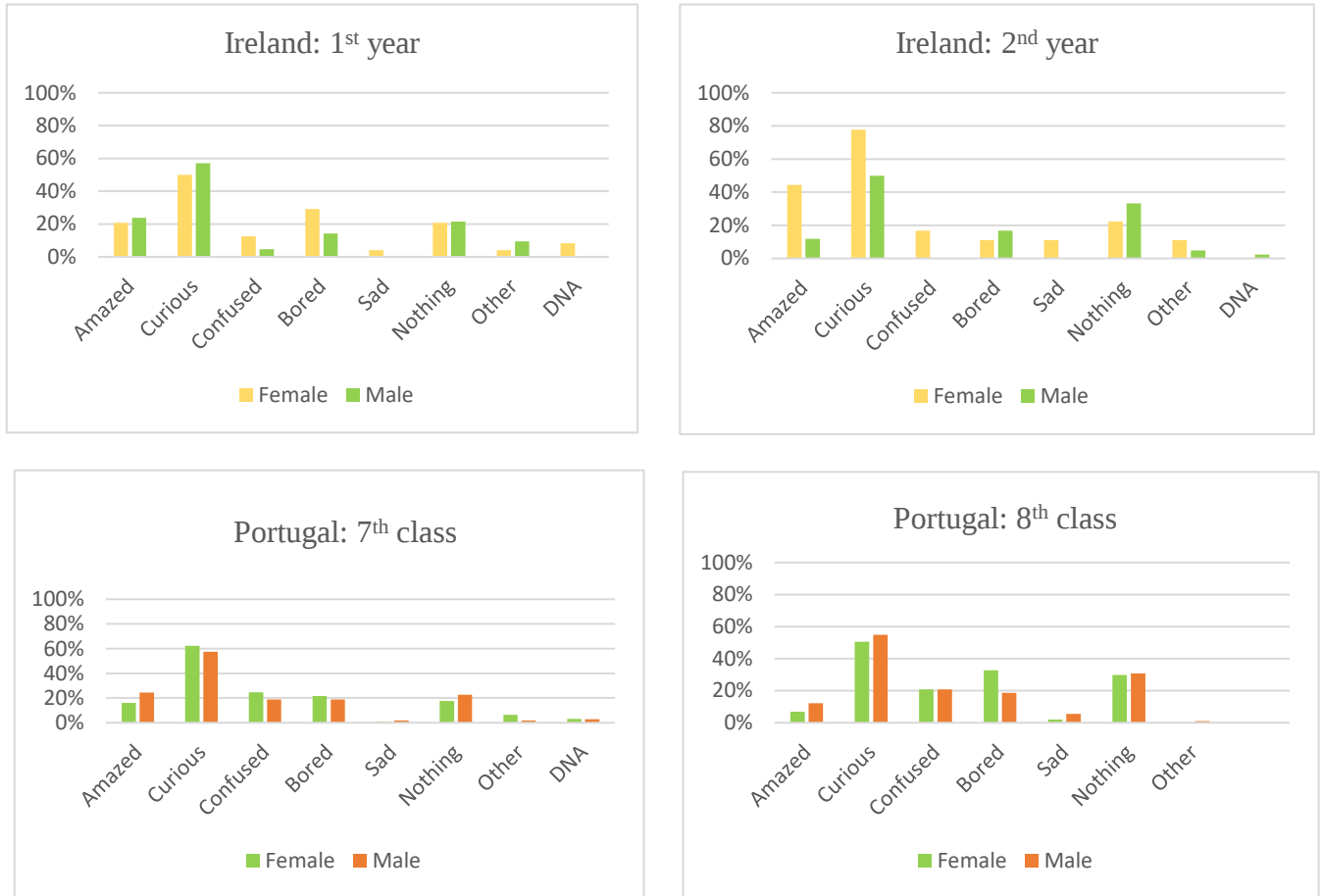


Figure 5.3 Results on Irish students compared to Portuguese students to the question: Have you ever learned about fossils in school?

When asked about their feelings upon learning about fossils in school, the most common response across all surveyed years was a sense of curiosity, as illustrated in Figure 5.4.

When learning about fossils, did you feel:



DNA Did Not Answer

Figure 5.4 Results on how Portuguese and Irish students felt when learning about fossils in school.

The results pertaining to the School Life Sphere indicate that despite distinct curriculums within these two countries, particularly regarding the teaching of Palaeontology, students' emotions and feelings towards certain subjects exhibit notable similarities. These similarities encompass reasons why students enjoy or do not enjoy Science and their emotional responses when learning about fossils.

5.1.2 Home resources

When it comes to knowing the resources students have at home, it varies according to personal preferences, family interests, economic background, and cultural influences.

The first question aimed to determine whether students had any fossils on display at home. While the fundamental principles of Science are typically acquired in educational settings like schools, a significant portion of an individual's scientific knowledge likely comes from sources beyond formal schooling. Television, books, magazines, the internet, museums,

and other informal learning settings are crucial in shaping people's understanding of Science (Falk & Dierking, 2010).

Interestingly, some similarities were found among the surveyed years (Figure 5.5).



Figure 5.5 Results on where Portuguese and Irish students have fossils featured in their homes.

Books and video games are two of the most common resources featuring fossils in students' homes. It is possible to notice that decorations were the third most selected, particularly among girls. In the "Other" category, students across all classes frequently mentioned toys, films and TV shows.

When asked with whom students usually discuss scientific topics at home, the main response is the immediate family, with mother, father and siblings being the most selected. The results are similar when students are asked about fossils and with whom they have discussions, as seen in Figure 5.6.

Have you talked about fossils with your:



DNA Did Not Answer

Figure 5.6 Results on which family members Portuguese and Irish students speak about fossils.

To highlight this point in a survey completed by Cardoso et al. (2008), over 60% of the surveyed young individuals asserted that their families usually engage in discussions on everyday issues, collaboratively solve problems, and express affection and emotions. This reflects a contemporary family structure that is more democratic, fostering emotional expression and providing opportunities for communication, dialogue, and, inevitably, both avert and latent conflicts.

The prominence of siblings among the family members with whom students frequently engage in discussions indicates a significant level of sibling interaction. Siblings' frequent interactions and companionship throughout childhood and adolescence, occurring more independently of direct parental or adult supervision, offer abundant opportunities to influence each other's behaviour, socio-emotional development and adjustments (McHale et al., 2012).

When asked about the resources students use to look up information about fossils, the most common answer was Google. The following answers diverged from traditional methods, like books, to social media platforms like YouTube, Instagram and TikTok, the last two prevalent for Irish students, as shown in Figure 5.7. Some students also mentioned using movies, TV shows, cartoons, and ChatGPT to learn more about fossils.

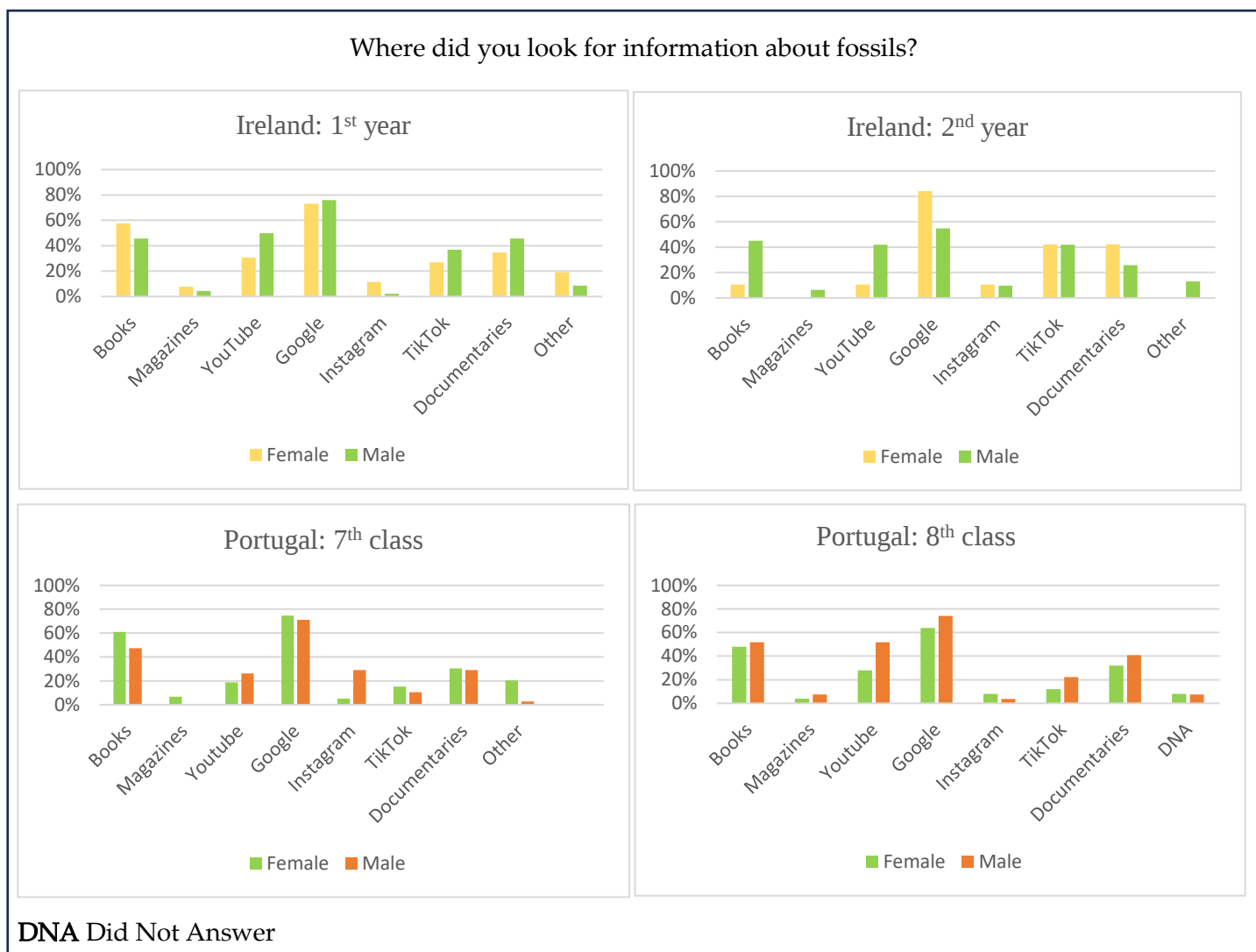


Figure 5.7 Results on the resources Portuguese and Irish students use to look for information about fossils.

According to Zarella (2010) in Williams (2023), social media is thought to be more effective than traditional media. Many companies leverage social media to amass a following, attract their target demographic, and influence them to engage with their brand.

Technology has shaped young people's resources and access to information.

This means that the way Science is communicated to young people is changing. In the past, communicators were constrained to traditional forms like printed press, public speaking, and limited television exposure. Nowadays, science communicators can effortlessly create, record, edit, and distribute content to millions of viewers through their devices. (Murphy, 2022), having quick access to millions of people on social media platforms.

The results from Life Sphere Home present many similarities between the two countries.

Family is a fundamental part of young people's lives. To understand the level of their involvement in paleontological activities, specific questions were asked in the surveys and focus groups. As highlighted above, either discussions about fossils, science or visits to museums, the immediate family, like mother, father and siblings, were the most selected in both

countries, showing a high level of engagement within the close family circle, allowing the students the opportunities to create memories and learn, stimulating an interest in the area.

A study completed by Diogo (2006) concludes that participation in parent-child activities contributes to expanding expectations. Notably, cultural activities like going to the cinema, theatre, or museums positively impact youth's learning abilities.

5.1.3 Access to museums and fossil sites

In the past two decades, museums and science centres have emerged as pivotal in shaping policies promoting scientific culture. The remarkable growth in the number of science centres has been observed in developed nations and some developing countries. The establishment of science centres, some gaining international acclaim, exporting exhibitions, and setting trends, is prevalent across virtually all European countries (Delicado, 2006).

Portugal has several museums related to Natural Sciences, particularly Palaeontology. These museums provide valuable learning opportunities for the public and engage individuals in various ways with the field.

As seen during the focus group analysis, many Portuguese students cited visiting national museums, parks, and science centres, like DinoPark in Lourinhã and the National Museum of Natural History and Science in Lisbon. Other students also elaborated on visiting museums abroad, in places such as the city of London and the country of Scotland.

A paper by Mateus et al. (2017) concludes that the characteristics of palaeontological collections mirror museums' typology. In university museums, the primary goal is mainly educational purposes and the collection efforts of their faculty and researchers.

Examples include the former Mineralogical and Geological Museum of the University of Coimbra, The National Museum of Natural History and Science in Lisbon, the Museum of Natural History and Science of the University of Porto, the Décio Thadeu Museum of the Instituto Superior Técnico in Lisbon and the Fernando Real Geological Museum in Vila Real.

There are also more regionally focused museums, like the Museum of Lourinhã, Cadaval Municipal Museum, and Batalha Municipal Museum, whose paleontological exhibitions showcase the geological origins of these municipalities.

Finally, some museums stem from particular situations, like the Natural History Museum of Sintra, the Natural Monument of Dinosaur footprints of Serra de Aire, or the Science Centre of Estremoz.

Museums like these serve as the primary repository of Portuguese palaeontological heritage, and are just a handful of the ones available throughout the country related to the areas of geology and palaeontology.

Ireland also boasts a diverse range of science and geology museums. Similar to Portugal, some geology museums are affiliated with universities, such as the Geology Museum of Trinity College Dublin, the James Mitchell Geology Museum of the University of Galway and the Geology Museum of the University College Cork. Other science-related museums include the National Museum of Ireland in Dublin and the Explorium – National Sport and Science Centre. Fossil sites like the Valentia tetrapod trackway on Valentia Island are also famous among geologists, palaeontologists, and palaeontology affectionates.

Furthermore, as focus groups have shown, many students have visited museums abroad, most commonly the London Natural History Museum.

As seen in Figure 5.8, the majority of students, both Portuguese and Irish, have visited institutions with fossils exposed.

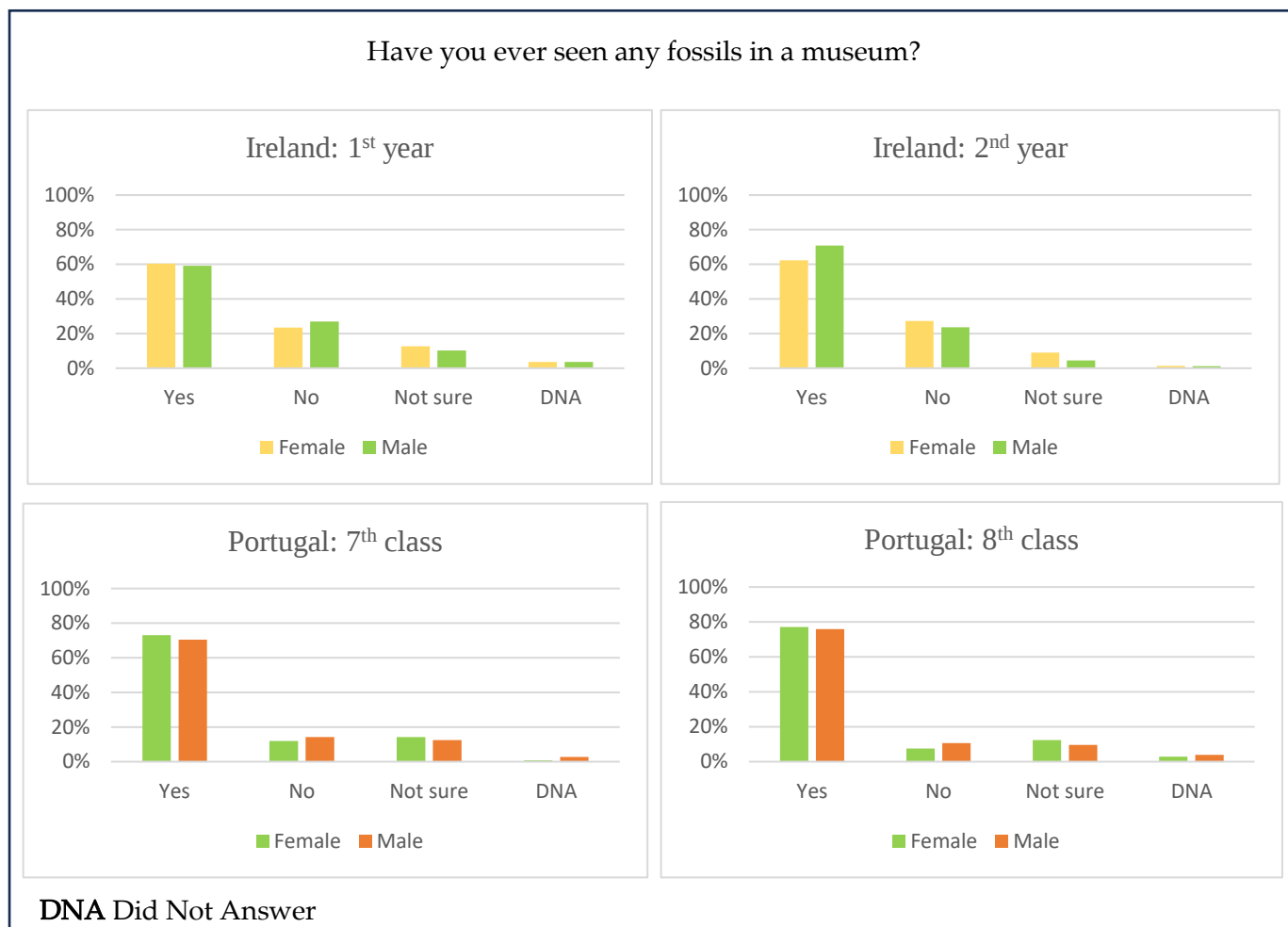


Figure 5.8 Results on Portuguese and Irish students to the question: Have you ever seen any fossils in a museum?

However, the percentage of Irish students who have not visited museums where fossils were exposed is much higher than that of Portuguese students.

This may be related to the samples of Portuguese students from an area known as the Lisbon and Tagus Valley Region, which includes three primary areas: Lisbon, Setúbal Peninsula and West and Tagus Valley. These students' residential areas are near several prominent museums, such as the National Museum of Natural History and Science in Lisbon, the Geological Museum and the Sintra Natural Museum. The town of Lourinhã, recognised as the Portuguese “capital of dinosaurs”, is just one hour and 30 minutes drive away, hosting the Lourinhã Museum, DinoPark and numerous beaches where casual passersby can discover fossils. Additionally, Sintra, Leiria and the Setúbal Peninsula also host several notable fossil sites.

The accessibility and proximity to locations such as dinosaur footprints, invertebrate and vertebrate fossils and science museums represent significant factors that could have influenced these students, especially when compared to other regions in Portugal or Ireland, swaying some results.

Beyond a mere visit, education within museums has been recognised to positively impact both teachers and students (Xanthoudaki, 1998 in Akamca et al., 2017). The museum setting provides a unique opportunity to employ alternative learning methods and actively engage with tangible evidence (Akamca et al., 2017).

Nevertheless, exposure to fossils is insufficient to increase students' interest. When asked if seeing fossils in a museum makes them want to learn more about the subject, the standard answer was negative (Figure 5.9).



Figure 5.9 Results on whether viewing fossils in a museum peaks students' interest in Palaeontology.

Focus groups also help to support these results. Students tend to enjoy and show more interest in a subject when it is discussed, demonstrated, and taught more dynamically and interactively.

Science communication is challenging, primarily due to science and technology's active evolution, growing influence on modern societies, and the emergence of scientific and social

controversies. Consequently, science communication methods are becoming progressively intricate, demanding heightened dedication and precision ([Bubela et al., 2009; Van der Sanden & Meijamn, 2012] in Amaral, 2015).

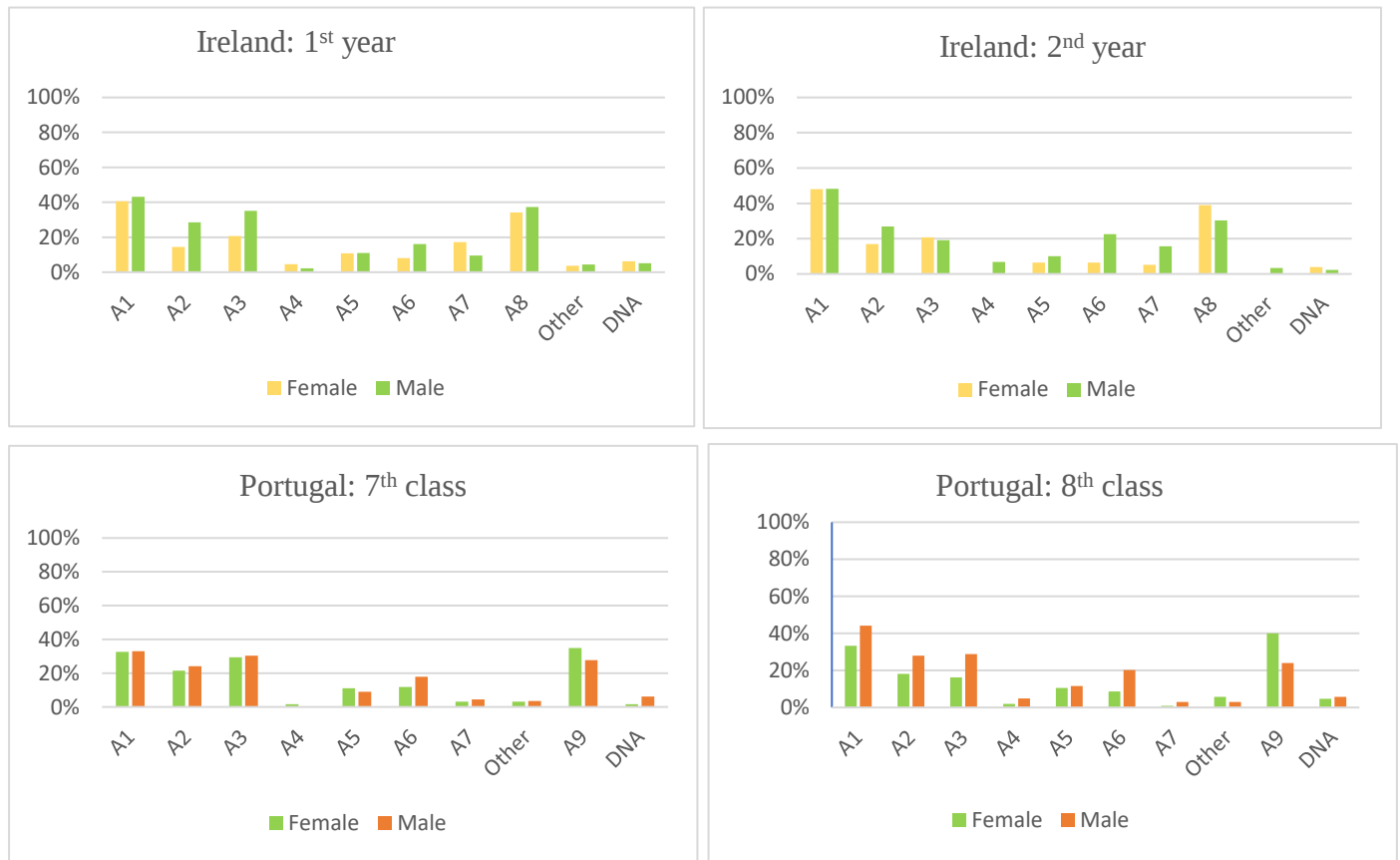
In museums dedicated to fossil exhibitions, a continuum stretches from the scientific to the recreational, aligning with the switch from fossils to models and from research to entertainment. In certain respects, this progression seems intricately linked to the age or topology of the target audience. Fossils attract a scientific audience, researchers, and university students, while skeletons appeal to a broader audience interested in natural sciences. Notably, activities in theme parks are predominately designed for a younger, children-oriented audience (Mateus, 2015).

5.1.4 Palaeontology engagement and overall interest

Comprehending how students engage with and have access to various paleontological activities is crucial for pinpointing the elements that may spark their interest in this field.

When Portuguese and Irish students were asked about previous participation in palaeontology-related activities, most cited watching a television programme, documentary, film, or YouTube video, as seen in Figure 5.10.

Have you ever done any of the following:



A1 Watch a TV programme or documentary about palaeontology

A2 Watch a YouTube video about palaeontology

A3 Watch a film about palaeontology

A4 Listened to a podcast about palaeontology

A5 Listened to someone talk about palaeontology on the radio

A6 Used apps or games on your phone, tablet and/or computer about palaeontology

A7 Watch someone give a talk about palaeontology

A9 None of the above

DNA: Did Not Answer

Figure 5.10 Activities Portuguese and Irish students have participated related to Palaeontology.

As technology has become integral to education, videos, movies, and documentaries have begun to play a significant role in the learning process (Ayvaci & Ozbek, 2019).

According to Robles (1997) in Topal et al. (2020), educational movies enhance visual understanding of a situation and resolve challenges associated with observing rapid scientific phenomena.

However, when asked in the focus groups about the films, documentaries, or TV shows students tend to watch, both Portuguese and Irish students frequently mentioned “Jurassic Park” and/or “Jurassic World”. These movies represent the closest connection students have

with Palaeontology, often providing them with a distorted perception of the field and the career of a palaeontologist.

Regarding students' views about a career as a palaeontologist, the most selected options are similar in both countries. When asked about the nature of this profession, the top three answers were “Hard,” “Interesting,” and “Boring” (Figure 5.11).

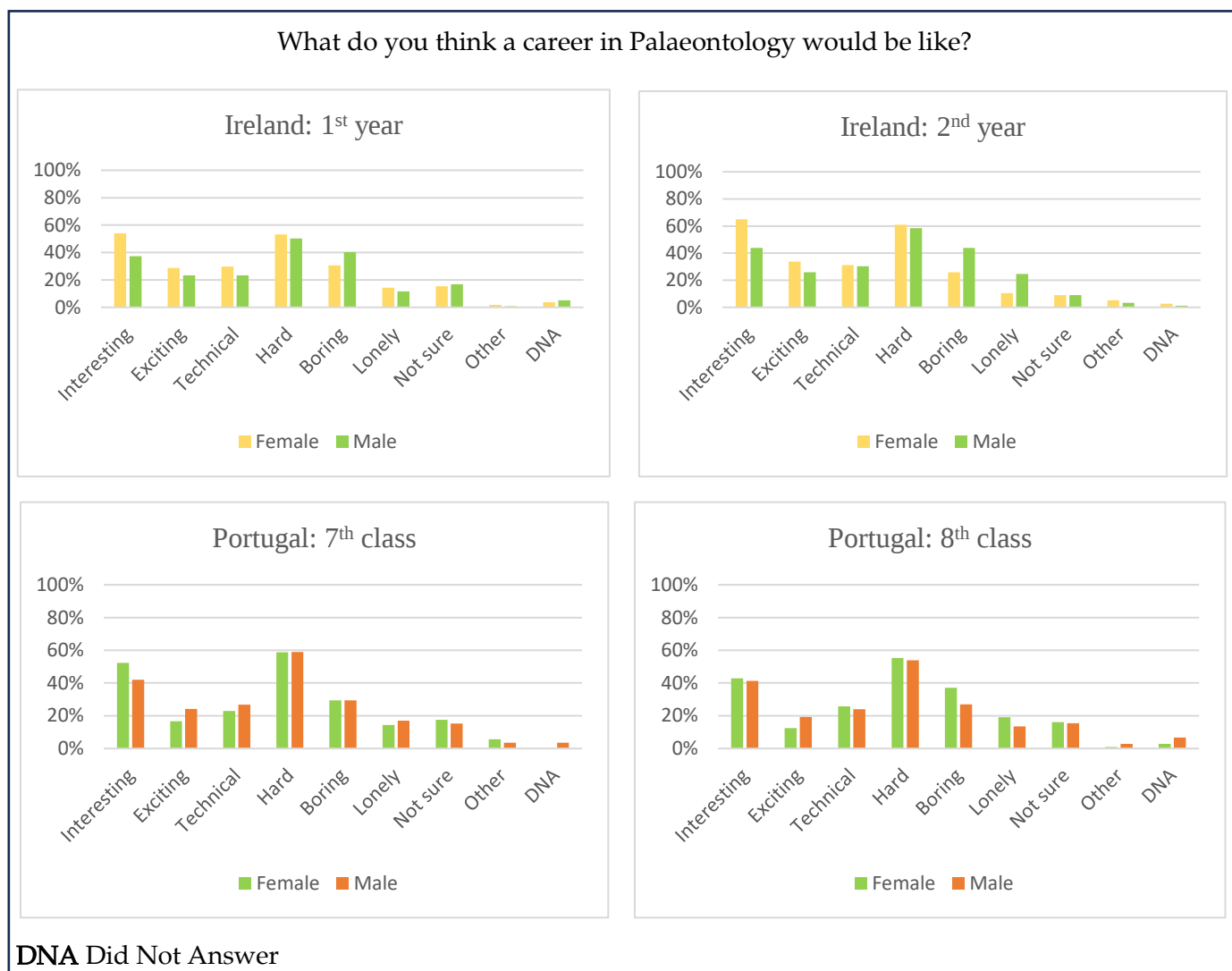


Figure 5.11 Results on Portuguese and Irish students' perceptions of the palaeontologist profession.

Nonetheless, further exploration of the concepts behind these selected words in the focus groups revealed notable differences between countries.

In Ireland, students struggle to comprehend palaeontology's science, palaeontologists' role, and significance. They perceive science as an uncertain field of study with continuously tested and refined theories, leading to unpredictability compared with more concrete fields like business and accounting. Conversely, Portuguese students view the scientific field as highly complex but are motivated to pursue careers in Science due to its perceived professional and financial advantages.

Unsurprisingly, when asked if they would like a career as a palaeontologist, only a minority of students replied affirmatively.

When choosing a career, adolescents must not only select a course or a job activity but also consider a lifestyle, a routine, and the environment in which they will be a part of (Filomeno, 1997 in Almeida & Pinho, 2008).

In the focus groups, students generally agreed on the importance of Palaeontology as a scientific field. Portuguese students primarily valued it for the substantial insights it provides into the past, which can aid in predicting future climate events. In contrast, Irish students emphasised its significance for uncovering information about past environments and ecosystems that would otherwise remain unknown, fostering curiosity and fascination with the field.

This chapter demonstrates that the similarities between Portugal and Ireland surpass their differences. Despite the geographical distance between these countries, unexplored factors such as religion, culture, and economics may have shaped the observed results. Palaeontology extends beyond a mere academic subject and permeates various aspects of curricula, institutions, and media through films, TV shows, marketing, and merchandising, as seen through Jurassic Park/World-themed T-shirts and ammonite imagery. The allure of the past evokes a sense of curiosity and wonder in young people, stimulating their imagination and interest in paleontological studies.

5.2 Challenges encountered in the study

As expressed in the introduction of this thesis, the first challenge that arose was due to the demographic composition of the study sample, which encompassed individuals aged 12 to 18 years. Given the sample status of minors, various entities were implicated, including school principals, pedagogical boards, parents or guardians, educational authorities within each country's respective jurisdiction, insurance providers, Garda, and police vetting agencies. The involvement of these entities was integral to the facilitations and realisation of the study, encompassing approval processes for methodologies employed and the utilisation of the resulting data. Consequently, the requisite approval procedures from these multifarious entities consumed a significant portion of the project duration.

The sample size obtained for both countries was considered adequate, with Portuguese surveys surpassing the goal of 500 students and the Irish sample reaching 89% of the sample goal. However, it is crucial to acknowledge the complex challenges encountered in the study. The inherent error margins that exist due to transcribing predominant paper-based data into a digital format, subsequent graphics representation, and analytical scrutiny were significant. These tasks were primarily undertaken by a single individual, which increased the likelihood of errors and interpretational discrepancies, particularly in the qualitative responses, adding a layer of complexity to the research.

Additionally, it would have been advantageous to conduct a pilot study involving a sample comprising 50 to 100 students prior to the dissemination of the surveys alongside a focus group session. Such an approach would have facilitated identifying and rectifying errors within both methodologies, thereby enhancing the integrity of subsequent data collection. Regrettably, due to temporal constraints, this preparatory phase was not possible.

Subsequently, a notable issue emerged when the original survey lacked a negative response option for question one in the Home Life Sphere, a deficiency rectified only with the Irish sample; this could have inflated the abstention of Portuguese students from the question.

Moreover, another challenge came in the form of the paper surveys. Since all the students completed the paper surveys in class with a pen or pencil, this allowed them the freedom to respond in their own manner, potentially resulting in invalid answers for reasons previously outlined in an earlier chapter. Additionally, there were inconsistencies and contradictions in the answers, with some rules being implemented when analysing data. For example, when a student replied negatively to one question and responded to the potential follow-up questions, the answers to the follow-up questions were not considered.

During focus groups, although the researcher was present to guide and motivate further engagement in the discussion, some students were more participative than others, leading to some of the focus groups not yielding as much information as initially anticipated.

A qualitative research is mainly contingent upon the researcher's proficiency in interpreting the data and effectively presenting the findings (Jacelon & O'Dell, 2005). With this in mind, the use of these methodologies in a scheme like the one completed for this project was the researcher's first experience. Errors occurred in the surveys, as previously discussed, and the focus groups, particularly in the initial ones, where the researcher could have been more considerate in eliciting responses from less participative students.

Despite acknowledging these challenges, the culmination of this study illuminated the knowledge and learning experience regarding Palaeontology among students in the 3rd Cycle of Basic Education in Portugal and the Junior Cycle in Ireland in their daily lives. Following thorough consideration and meticulous analysis of this information, it becomes imperative to discuss how these findings can inform future educational and promotional initiatives concerning Palaeontology within these academic years in Portugal and Ireland.

5.2 Future directions

The study's findings for this master's thesis mark the inception of a significantly larger endeavour. At this point, numerous directions can be taken, necessitating substantial effort to refine and build upon the results obtained for this project.

Starting by adopting a multivariable analysis approach to examine the study's results. This method will provide further insights into how various factors influence and interact with each other and students' lives.

The results also enable the identification and highlighting of certain less investigated areas, such as the Junior Cycle History curriculum mentioned earlier, which could be subject to further exploration in subsequent studies.

A more targeted survey, distributed throughout the countries studied, would facilitate comparisons within each country to discern which regions exhibit greater engagement with palaeontological subjects. Additionally, economic, cultural and religious influences could be more thoroughly explored in this context.

Numerous additional questions were to be posed, delving into the endeavours—or lack thereof—that each country and region is undertaking to promote and educate in the field of Earth Sciences, specifically Palaeontology.

Exploring and comprehending in greater depth the influence of public spaces such as museums, nature and geological reserves, science fairs and fossil sites, through their perspective, on young audiences could also serve as a prospective research endeavour. This exploration could aid in more effectively promoting and engaging these age groups, which are often overlooked by institutions.

In summary, considerable work remains to be undertaken to comprehend the determinants that shape young people's attitudes towards Palaeontology. This study serves as an initial step towards a broader initiative that could significantly impact public perception, establishing a connection between the scientific field of Palaeontology and the public, particularly adolescent audiences.

6. CONCLUSION

Today's youth, with their unprecedented access to information and resources, possess a unique capacity. This empowerment, while making their preferences and pursuits more fluid, also reveals their inherent potential. It is this potential that inspires us and compels us to find creative ways to engage with this generation.

In summary, supported by insights from focus groups and surveys, it is possible to reaffirm a well-established concept: interactive programs are not just operative but significantly more effective in fostering public engagement, particularly among young individuals, compared to alternative methods. By involving students in hands-on activities and facilitating dialogues that stimulate and deepen understanding, teaching models such as interactive processes and other inquiry-based approaches in Science (Marek & Carvalho, 1995 in Strauss et al., 2005) can effectively bridge students to its domain.

The educational process relies on didactic models, crucial for effectively achieving educational goals. In this regard, it's emphasised that studies in the field of Palaeontology are extremely important for contributing to and constructing scientific knowledge as a whole (Santos & Farias, 2023).

Both countries (Portugal and Ireland) and governing bodies are increasingly recognising this trend and directing their efforts towards cultivating a population that appreciates and engages with Art, Science and Heritage. There is a particular emphasis on establishing ventures and initiatives geared towards fostering greater involvement from the younger generation.

Through the completion of this project, understanding has advanced, even if slightly, regarding the determinants shaping young individuals' perspectives on Palaeontology when it comes to the three "Life Spheres" of School, Home and Broader Society.

At its core, this study has identified key factors that significantly influence students in the 3rd Cycle of Basic Education and Junior Cycle. Importantly, it underscores the crucial roles of teachers, curriculum plans and dynamic learning methods, such as laboratory work and museum visits, in promoting practical engagement with Science. Moreover, in some cases, it underscores the role of parents' interest in Science at home in fostering curiosity and a desire for further exploration. The study also highlights the importance of diverse resources, such as museums and access to palaeontology material, which, when interactive, are more likely to capture young people's interest. Additionally, the influence of mainstream media on the portrayal of palaeontologists' activities and the science of palaeontology is significant.

As per Strapasson et al. (2020) in Santos and Farias (2023), the study of Palaeontology goes beyond merely discussing its history and evolution. This field of science creates opportunities for exploring topics across various scientific disciplines. Recognising its existence

leads to a considerable expansion of scientific ideas that must be discussed, analysed and explored.

Overall, the outcomes derived from this investigation do not constitute groundbreaking findings. As evidenced in earlier Life Spheres, numerous studies have extensively examined and determined the factors influencing the choices and preferences of young individuals without deviating substantially from the observations made in this study. Nevertheless, certain contextual nuances on this specific project warrant emphasis.

Palaeontology is seen mostly by students as it is portrayed in movies and TV shows, with many thinking it is interesting, however too complex for their capacities and still somewhat tedious with no guarantee of financial and professional stability and prestige.

Palaeontologists in non-formal contexts are responsible for bringing Science closer to citizens. The average person seldom considers fossils as a witness to an event in Earth's history, a history that they are also part of. Lacking awareness of the exceptional process of fossilisations, they rarely recognise its uniqueness, much like the singularity attributed to a crucial piece of evidence in a crime or the first demonstration of human abstract thinking (Henriques, 2010).

In Portugal, institutions such as Pavilhão do Conhecimento and the Department of Earth Sciences in the Faculty of Science and Technology from the NOVA University play a pivotal role in bridging the knowledge gap. Their educational programs, designed in collaboration with schools, promote engagement with several areas of the scientific field. These initiatives encourage students of all ages to explore the possibilities within Earth Sciences and consider potential professional pathways in this domain.

In Ireland, the Irish Fossil Heritage program initiated by UCC aims to revitalise interest through a dynamic approach. The offers include free workshops, interactive quizzes and video games, a dedicated website with a fossil map, and engaging videos (UCC - Ireland's Fossil Heritage, 2023).

Through initiatives such as this, the discipline of Palaeontology could be transformed from a subject perceived as boring and difficult into engaging and exciting. Its relevance could be emphasised beyond merely understanding the past and the popularised notion of "what type of dinosaurs could eat people?". Such programs can teach students critical thinking skills, enabling them to discern the differences between scientific knowledge and the portrayals found in mainstream films and sensationalised documentaries, which remain integral in young people's lives when engaging in paleontological activities.

While providing valuable insights, this study's findings are just a small glimpse of the reality that influences young people within very specific conditions. These results represent more than just a stride, they represent a potential leap towards more impactful endeavours that have the power to revolutionise the pedagogy and presentation of Palaeontology to students.

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ANNEXES

Annexe I – Survey implemented in Ireland

Gender: _____

School year: _____

Age: _____

Date: _____

SECTION 1: SCHOOL

Q1. Which subject do you study?

- ☐ Science
- ☐ Geography
- ☐ Both

Q2. Do you enjoy studying the subjects mentioned above?

- ☐ YES
- ☐ NO

• *If you answered "yes" to Q2, go to Q3, if not go to Q4.*

Q3. What do you like about studying Science and/or Geography? (Tick all that apply)

- ☐ It's interesting
- ☐ I like the teacher
- ☐ I like the textbooks
- ☐ I like to do experiments in the labs
- ☐ I like learning about how the world works
- ☐ I like to be able to connect what I learn in class with real life outside school
- ☐ I like it because I learn about: _____

• *If you answered Q3, go to Q5.*

Q4. If you answered "No" to Q2, please answer this question. Why don't you enjoy studying Science and/or Geography? (Tick all that apply)

- ☐ It's hard
- ☐ It's confusing
- ☐ It's boring
- ☐ I don't see it as something important to learn
- ☐ There are not enough field trips
- ☐ I feel there is too much information to learn
- ☐ I don't like it because: _____

Q5. Have you ever learned about fossils in school?

- ☐ YES ☐ NO ☐ NOT SURE

• *If you answered "Yes" to Q5 go to Q6, if not go to Q9.*

Q6. How did you learn about fossils in school? (Tick all that apply)

- ☐ School books
- ☐ Other books (not a textbook)
- ☐ The teacher spoke about it in class
- ☐ A Palaeontologist visited my school and gave a talk
- ☐ Had a field trip to a museum or fossil site
- ☐ I looked at a website that had information about fossils
- ☐ Watch a video in school
- ☐ Other (please specify): _____

Q7. When you learned about fossils in school, did you feel: (Tick all that apply)

- ☐ Amazed
- ☐ Curious
- ☐ Confused
- ☐ Bored
- ☐ Sad
- ☐ Nothing
- ☐ Other (please specify): _____

Q8. Have you learned something about fossils in school that made you want to learn more about the subject?

☐ YES ☐ NO ☐ NOT SURE

Q9. Do you have any friends in school who like palaeontology?

☐ YES ☐ NO ☐ NOT SURE

• *If you answered "yes" to Q9, go to Q10, if not go to section 2.*

Q10. Does having friends who like palaeontology make you want to learn more about palaeontology?

☐ YES ☐ NO ☐ NOT SURE

SECTION 2: HOME

Q1. In your home, are fossils featured in any: (Tick all that apply)

- ☐ Books
- ☐ Board games
- ☐ Video games
- ☐ Clothing
- ☐ Decorations
- ☐ Posters
- ☐ I don't have any
- ☐ Other (please describe): _____

Q2. Have you ever talked about fossils at home?

☐ YES ☐ NO ☐ NOT SURE

• *If you answered "Yes" to Q2 go to Q3, if not go to Q4.*

Q3. Have you talked about fossils with your: (Tick all that apply)

- ☐ Mother
- ☐ Father
- ☐ Brother/Sister
- ☐ Aunt/Uncle
- ☐ Grandparents
- ☐ Family friend
- ☐ Other (please specify): _____

Q4. Have you talked about Science topics at home?

☐ YES ☐ NO ☐ NOT SURE

• *If you answered "Yes" to Q4 go to Q5, if not go to Q6.*

Q5. Have you talked about Science topics with your: (Tick all that apply)

- ☐ Mother
- ☐ Father
- ☐ Brother/Sister
- ☐ Aunt/Uncle
- ☐ Grandparents
- ☐ Family friend
- ☐ Other (please specify): _____

Q6. Is anyone in your immediate family a scientist or studying science?

- ☐ YES ☐ NO ☐ NOT SURE

Q7. Is anyone in your family interested in Science?

- ☐ YES ☐ NO ☐ NOT SURE

Q8. Is anyone in your family interested in fossils?

- ☐ YES ☐ NO ☐ NOT SURE

Q9. Have you ever spent time at home looking up information about fossils?

- ☐ YES ☐ NO ☐ NOT SURE

• ***If you answered "Yes" to Q9 go to Q10, if not go to Q11.***

Q10. Where did you look for information?

- ☐ Books
- ☐ Magazines
- ☐ Youtube
- ☐ Google
- ☐ Instagram
- ☐ TikTok
- ☐ Documentaries
- ☐ Other (please specify): _____

Q11. Have you ever learned about fossils at a friend's home?

- ☐ YES ☐ NO ☐ NOT SURE

SECTION 3: BROADER SOCIETY

Q1. Have you ever done any of the following? (Tick all that apply)

- ☐ Watch a TV programme or documentary about palaeontology
- ☐ Watch a YouTube video about palaeontology
- ☐ Watch a film about palaeontology
- ☐ Listened to a podcast about palaeontology
- ☐ Listened to someone talk about palaeontology on the radio
- ☐ Used apps or games on your phone, tablet and/or computer about palaeontology
- ☐ Watch someone give a talk about palaeontology
- ☐ None of the above
- ☐ Other (please specify): _____

• ***If you answered "None of the above" to Q1 go to Q3, if not go to Q2.***

Q2. After watching the content in Q1, did you want to learn more about palaeontology?

- ☐ YES ☐ NO ☐ NOT SURE

Q3. Do you follow any online accounts or pages on social media platforms (YouTube channels, Facebook, Instagram or TikTok) that share information about palaeontology?

- ☐ YES ☐ NO ☐ NOT SURE

Q4. Have you ever seen any fossils in a museum?

- ☐ YES ☐ NO ☐ NOT SURE

• ***If you answered "Yes" to Q4 go to Q5, if not go to Q7.***

Q5. Did you visit the museum with your: (Tick all that apply)

- ☐ Mother
- ☐ Father
- ☐ Brother/Sister
- ☐ Aunt/Uncle
- ☐ Grandparents
- ☐ Family friend
- ☐ School
- ☐ Other (please specify): _____

Q6. Does seeing fossils in a museum make you want to learn more about fossils and palaeontology?

☐ YES ☐ NO ☐ NOT SURE

Q7. What do you think a job as a scientist would be like? (Tick all that apply)

- ☐ Interesting
- ☐ Exciting
- ☐ Technical
- ☐ Hard
- ☐ Boring
- ☐ Lonely
- ☐ Not sure
- ☐ Other (please specify): _____

Q8. What do you think a career in palaeontology would be like? (Tick all that apply)

- ☐ Interesting
- ☐ Exciting
- ☐ Technical
- ☐ Hard
- ☐ Boring
- ☐ Lonely
- ☐ Not sure
- ☐ Other (please specify): _____

Q9. When you think about a job in palaeontology, what springs to your mind? (Tick all that apply)

- ☐ Working in a lab a lot
- ☐ Going on field trips a lot
- ☐ Meetings all-day
- ☐ Excavating and preparing fossils
- ☐ Work alone
- ☐ Work with a team
- ☐ Drawing dinosaurs and other extinct animals
- ☐ Giving lectures and talks
- ☐ Working in a museum
- ☐ Other (please specify): _____

Q10. Would you like a job as a palaeontologist?

☐ YES ☐ NO ☐ NOT SURE

•If you answered "Yes" to Q10 go to Q11, if not go to Q12.

Q11. If Yes, why? (Tick all that apply)

- ☐ I want to learn more about extinct animals and plants
- ☐ I want to learn more about extinctions
- ☐ I like dinosaurs
- ☐ I like fossils
- ☐ I think learning about the past is fascinating
- ☐ Other (please specify): _____

Q12. If No or Not Sure, why? (Tick all that apply)

- ☐ I have never thought about it
- ☐ I am not interested in planet Earth's past
- ☐ It's boring
- ☐ It's too hard
- ☐ I don't like the subjects
- ☐ Other (please specify): _____

Thank you for participating in this
survey!



Annexe II – Survey implemented in Portugal

Questionários para alunos do 3º Ciclo

Caro aluno, este questionário serve para colheita de dados relacionado com a Dissertação de Mestrado em Paleontologia com o tema: “Que fatores influenciam os jovens nas suas atitudes para com a Paleontologia?” Este questionário é totalmente anónimo, e não faz parte de nenhuma avaliação por parte da escola. Não há respostas certas ou erradas, podes saltar as perguntas que quiseres, por isso, por favor responde com a maior honestidade possível. Podes usar um lápis ou uma caneta.

Género: _____

Ano de escolaridade: _____

Idade: _____

Data: _____

SECÇÃO 1: ESCOLA

P1. Gostas da disciplina de Ciências Naturais?

☐ SIM ☐ NÃO

- Se respondeste “Sim” à pergunta P1 responde à pergunta P2, se não vai para a pergunta P3.

P2. Porque é que gostas de estudar Ciências Naturais? (assinala todas as opções que se aplicam à tua situação)

☐ É interessante

☐ Gosto do/a professor/a

☐ Gosto dos manuais escolares

☐ Gosto de fazer experiências em laboratório

☐ Gosto de aprender como a Terra funciona

☐ Gosto de fazer a ligação do que aprendo na sala de aula com o que se passa fora da escola

☐ Gosto porque aprendo sobre: _____

- Se respondeste à pergunta P2, vai para a pergunta P4.

P3. Se respondeste “Não” à pergunta P1, por favor responde a esta questão. Porque é que não gostas de estudar a disciplina de Ciências Naturais? (assinala todas as opções que se aplicam à tua situação)

- ☐ É uma disciplina difícil
- ☐ É uma disciplina confusa
- ☐ É uma disciplina aborrecida
- ☐ Não acho que seja importante aprender
- ☐ Não há visitas de estudo suficientes nesta disciplina
- ☐ Sinto que há muita informação para aprender
- ☐ Não gosto porque: _____

P4. Já alguma vez abordaste a matéria de fósseis na escola?

- ☐ SIM ☐ NÃO ☐ NÃO SEI

• Se respondeste “Sim” à pergunta P4 responde à pergunta P5, se não vai para a pergunta P7.

P5. Como é que aprendeste sobre fósseis na escola? (assinala todas as opções que se aplicam à tua situação)

- ☐ Manuais escolares
- ☐ Outros livros
- ☐ O/A professor/a falou sobre esse assunto na aula
- ☐ Visita de um paleontólogo/a à escola que falou sobre fósseis
- ☐ Fiz uma visita de estudo a um museu ou local com fósseis
- ☐ Entrei numa página da internet que falava sobre fósseis
- ☐ Vi um vídeo sobre fósseis na escola
- ☐ Outro (por favor, especifica): _____

P6. Quando aprendeste sobre fósseis na escola como é que te sentiste? (assinala todas as opções que se aplicam à tua situação)

- ☐ Fascinado/a
- ☐ Curioso/a
- ☐ Confuso/a
- ☐ Aborrecido/a
- ☐ Triste
- ☐ Nada
- ☐ Outro (por favor, especifica): _____

P7. Já alguma vez aprendeste algo sobre fósseis na escola que te fizeram querer saber mais sobre o assunto?

☐ SIM ☐ NÃO ☐ NÃO SEI

P8. Tens alguns amigos na escola que gostam de Paleontologia?

☐ SIM ☐ NÃO ☐ NÃO SEI

• Se respondeste “Sim” à pergunta P8 responde à pergunta P9, se não passa para a secção 2.

P9. Teres amigos na escola que gostam de Paleontologia faz com que queiras aprender mais sobre o assunto?

☐ SIM ☐ NÃO ☐ NÃO SEI

SECÇÃO 2: CASA

P1. Na tua casa, tens fósseis expostos em: (assinala todas as opções que se aplicam à tua situação)

- ☐ Livros
- ☐ Jogos de tabuleiro
- ☐ Vídeo jogos
- ☐ Roupas
- ☐ Decoração
- ☐ Pósteres
- ☐ Outro (por favor, especifica): _____

P2. Já alguma vez falaste sobre fósseis em casa?

☐ SIM ☐ NÃO ☐ NÃO SEI

• Se respondeste “Sim” à pergunta P2 responde à pergunta P3, se não vai para a pergunta P4.

P3. Quando falas sobre fósseis em casa, falas com: (assinala todas as opções que se aplicam à tua situação)

- ☐ Mãe
- ☐ Pai
- ☐ Irmão/Irmã
- ☐ Tia/Tio
- ☐ Avó/avô
- ☐ Amigo de família
- ☐ Outro (por favor, especifica): _____

P4. Já alguma vez falaste sobre Ciência em casa?

☐ SIM ☐ NÃO ☐ NÃO SEI

• Se respondeste “Sim” à pergunta P4 responde à pergunta P5, se não vai para a pergunta P6.

P5. Quando falas sobre Ciência em casa, falas com: (assinala todas as opções que se aplicam à tua situação)

☐ Mãe
☐ Pai
☐ Irmão/Irmã
☐ Tia/tio
☐ Avó/avô
☐ Amigo de família
☐ Outro (por favor, específica): _____

P6. Tens alguém na tua família que está ligado à Ciência ou é um cientista?

☐ SIM ☐ NÃO ☐ NÃO SEI

P7. Tens alguém da tua família interessado em Ciência?

☐ SIM ☐ NÃO ☐ NÃO SEI

P8. Tens alguém da tua família interessado em fósseis?

☐ SIM ☐ NÃO ☐ NÃO SEI

P9. Já alguma vez foste à procura de informação sobre fósseis, em casa?

☐ SIM ☐ NÃO ☐ NÃO SEI

• Se respondeste “Sim” à pergunta P9 responde à pergunta P10, se não vai para a pergunta P11.

P10. Onde é que procuraste essa informação?

- ☐ Livros
- ☐ Revistas
- ☐ Youtube
- ☐ Google
- ☐ Instagram
- ☐ TikTok
- ☐ Documentários
- ☐ Outro (por favor, especifica): _____

P11. Já alguma vez aprendeste sobre fósseis em casa de amigos?

- ☐ SIM ☐ NÃO ☐ NÃO SEI

SECÇÃO 3: SOCIEDADE EM GERAL

P1. Já algumas vez fizeste as atividades que se seguem? (assinala todas as opções que se aplicam à tua situação)

- ☐ Assistir a um programa de televisão ou documentário sobre Paleontologia
- ☐ Assistir a um vídeo no YouTube sobre Paleontologia
- ☐ Assistir a um filme sobre Paleontologia
- ☐ Ouvir um podcast sobre Paleontologia
- ☐ Ouvir alguém a falar na rádio sobre Paleontologia
- ☐ Usar aplicações ou jogos no telemóvel, tablet ou computador sobre Paleontologia
- ☐ Assistir a uma palestra sobre Paleontologia
- ☐ Outro (por favor, especifica): _____
- ☐ Nenhuma das anteriores

• Se respondeste “Nenhuma das anteriores” à pergunta P1 vai para a pergunta P3, se não responde à pergunta P2.

P2. Depois de fazeres a(s) atividade(s) da P1, isso fez com que quisesses aprender mais sobre Paleontologia?

- ☐ SIM ☐ NÃO ☐ NÃO SEI

P3. Segues alguma conta nas redes sociais (canais no YouTube, Facebook, Instagram ou TikTok) que partilhem informação sobre Paleontologia?

- ☐ SIM ☐ NÃO ☐ NÃO SEI

P4. Já alguma vez visitaste um museu onde viste fósseis expostos?

☐ SIM ☐ NÃO ☐ NÃO SEI

• Se respondeste “Sim” à pergunta P4 responde à pergunta P5, se não vai para a pergunta P7.

P5. Visitaste o museu com: (assinala todas as opções que se aplicam à tua situação)

☐ Mãe
☐ Pai
☐ Irmão/Irmã
☐ Tia/Tio
☐ Avó/Avô
☐ Amigo de família
☐ Escola
☐ Outro (por favor, especifica): _____

P6. Teres visto fósseis no museu fez com que quisesses aprender mais sobre Paleontologia?

☐ SIM ☐ NÃO ☐ NÃO SEI

P7. Achas que trabalhar como cientista seria? (assinala todas as opções que se aplicam à tua situação)

☐ Interessante
☐ Excitante
☐ Técnico
☐ Difícil
☐ Aborrecido
☐ Solitário
☐ Não sei
☐ Outro (por favor, especifica): _____

P8. Achas que um trabalho como paleontólogo/a seria? (assinala todas as opções que se aplicam à tua situação)

- ☐ Interessante
- ☐ Excitante
- ☐ Técnico
- ☐ Difícil
- ☐ Aborrecido
- ☐ Solitário
- ☐ Não sei
- ☐ Outro (por favor, especifica): _____

P9. O que pensas que faz um paleontólogo? (assinala todas as opções que se aplicam à tua situação)

- ☐ Trabalha dentro de um laboratório
- ☐ Faz muitas saídas de campo
- ☐ Tem muitas reuniões
- ☐ Faz escavação e preparação de fósseis
- ☐ Trabalha sozinho/a
- ☐ Trabalha em equipa
- ☐ Desenha dinossauros e outros animais extintos
- ☐ Dá aulas e palestras
- ☐ Trabalha num museu
- ☐ Outro (por favor, especifica): _____

P10. Gostavas de ser paleontólogo?

- ☐ SIM ☐ NÃO ☐ NÃO SEI

• Se respondeste “Sim” à pergunta P10 responde à pergunta P11, se não vai para a pergunta P12.

P11. Se “Sim”, porquê? (assinala todas as opções que se aplicam à tua situação)

- ☐ Quero aprender mais sobre animais e plantas extintas
- ☐ Quero aprender mais sobre extinções
- ☐ Gosto de dinossauros
- ☐ Gosto de fósseis
- ☐ Aprender sobre o passado é fascinante
- ☐ Outro (por favor, especifica): _____

P12. Se “Não” ou “Não sei”, porquê? (assinala todas as opções que se aplicam à tua situação)

- ☐ Nunca pensei sobre isso
- ☐ Não tenho interesse em aprender sobre a História da Terra e da Vida
- ☐ É aborrecido
- ☐ É muito difícil
- ☐ Não gosto do tema
- ☐ Outro (por favor, especifica): _____

Obrigada por participares neste
questionário!



Annexe III – Focus group questions

Date: _____

School year: _____

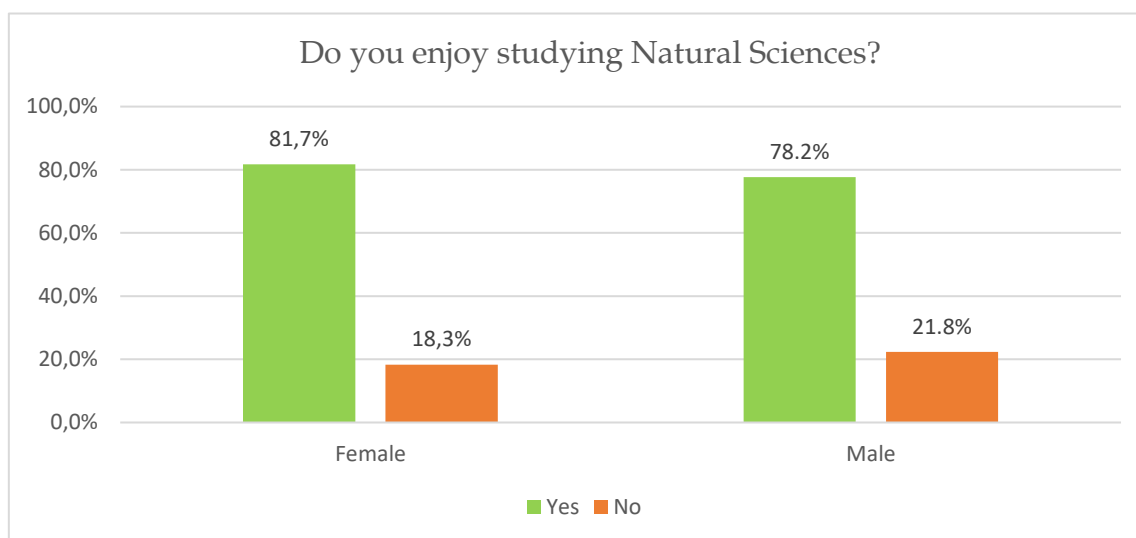
N° of students: _____

Genders: _____

- What comes to your mind when you think about Palaeontology?
- What do you think palaeontologists do?
- Do you feel more curious about palaeontology (ancient life and extinct animals) when someone (teacher, colleague, guest palaeontologist) talks about it in school?
- Have you ever visited a science centre as part of a school trip? (e.g. a museum, nature reserve, science festival, fossil site)?
- Did these trips make you more curious about palaeontology?
- Has visiting the science festivals/ Museum taught you something new about science topics you didn't learn at school?
- Have you ever read or watched something about palaeontology? (videos, documentaries/TV shows, books)?
- Where, what and with whom?
- Did you learn anything from watching these videos, documentaries, TV shows or reading a book about palaeontology?
- Does watching/reading (videos, documentaries/TV shows, books) make you want to learn more about it?
- What is your favourite film, TV programme, video game or book about palaeontology/dinosaurs?
- Have you ever noticed any images related to palaeontology in your day-to-day life? (pictures of extinct animals in clothing, museums, galleries, public shops, schools, sports)
- Do you think learning palaeontology is important? Why or why not?
- Do you have anyone who encourages you to know more about Science? (Palaeontologists, science communicators, teachers, friends, or others).
- Does having someone you admire as a scientist makes you want to be a scientist in the future?

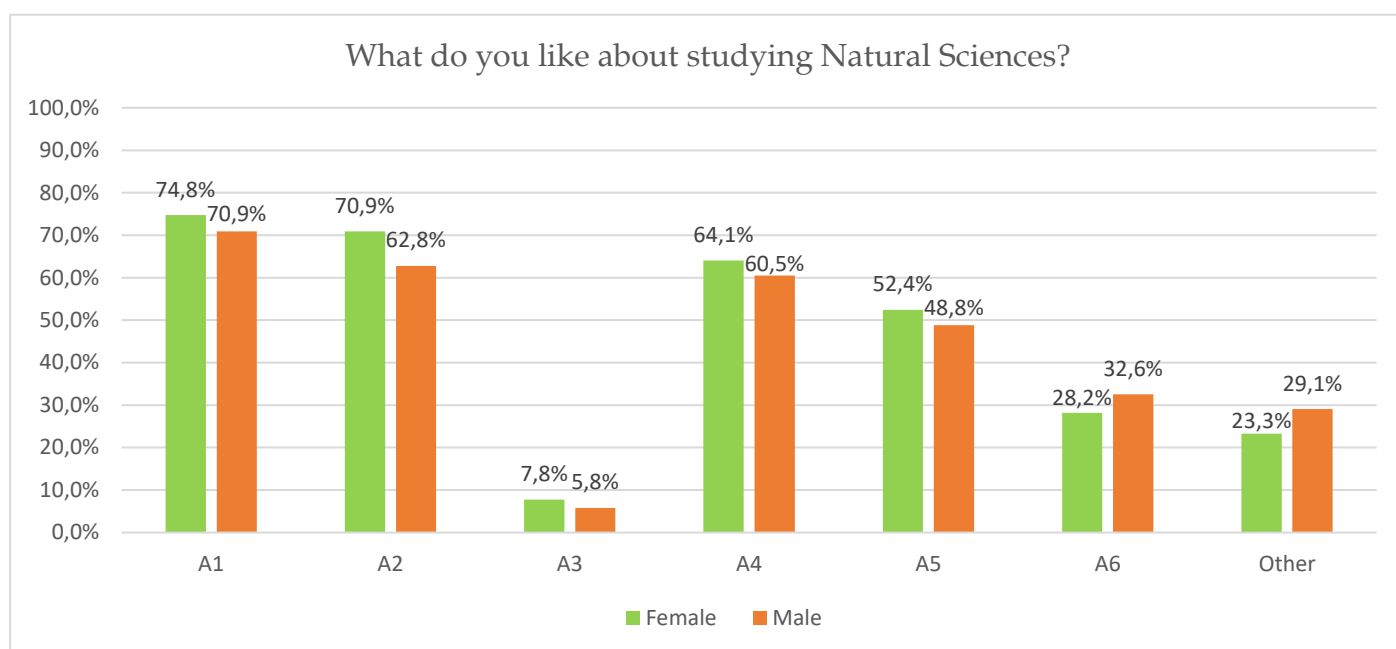
Annexe IV - Graphics from survey results: Portugal Life Sphere School

7th CLASS



Graphic 1: Representation of the answers to question number one of the Life Sphere School in 7th Class Portuguese students.

This graphic represents the sample of 7th class female and male students, comprising 126 girls and 112 boys; however, due to two invalid answers, only 110 boys were totalled. The majority of both genders (81.7% girls and 78.2% boys) indicated that they enjoy studying Natural Sciences, while a smaller percentage (18.3% of girls and 21.8% of boys) answered “No”.



Graphic 2: Representation of the answers to question number two of the Life Sphere School in 7th Class Portuguese students.

Description

A1 It's interesting

A4 I like to do experiments in the labs

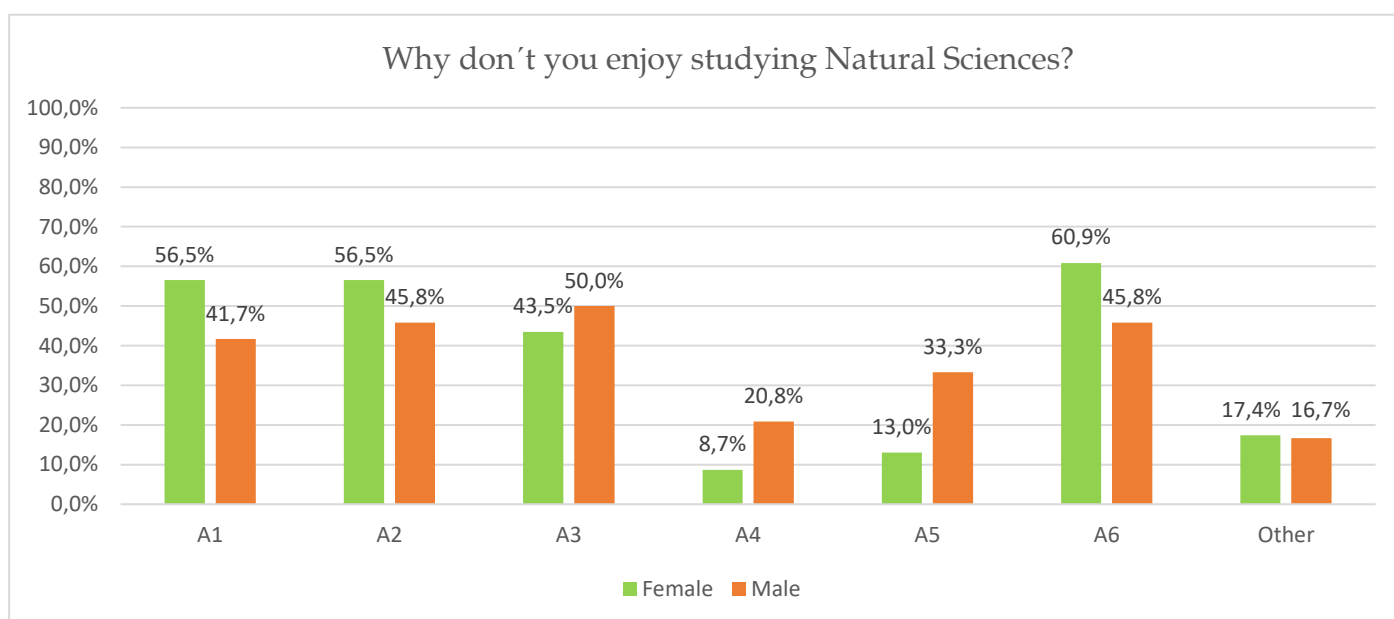
A2 I like the teacher

A5 I like learning about how the world works

A3 I like the textbooks

A6 I like to be able to connect what I learn in class with real life outside school

Graphic 2 includes the number of students who replied “Yes” to question 1; these include a total of 103 girls and 86 boys. Predominantly, the most common reasons cited by both genders for enjoying natural sciences are answers 1 and 2, indicating an interest in the subject (74.8% of girls and 70.9% of boys) and that they like the teacher (70.9% of girls and 62.8% of boys). Following closely, experiences in the laboratory are the third significant factor contributing to their enjoyment, with 64.1% of girls and 60.5% of boys mentioning it. Additionally, over half of the girls (52.4%) enjoy it because they learn how the world works, a sentiment shared with 48.8% of boys. Furthermore, 32.6% of boys say they enjoy the subject of natural sciences because they can connect what they learn in class with the world outside, the same as 28.2% of girls. A smaller proportion of students (7.8% of girls and 5.8% of boys) say they like the textbooks, and 29.1% of boys selected “Other”, citing an interest in topics such as vulcanology, mineralogy, earthquakes and rocks. In addition to those topics, and similar to 23.3% of girls, they also like to learn about nature, animals, fossils, the human body, and the history of Planet Earth.



Graphic 3: Representation of the answers to question number three of the Life Sphere School in 7th Class Portuguese students.

Description

A1 It's hard

A2 It's confusing

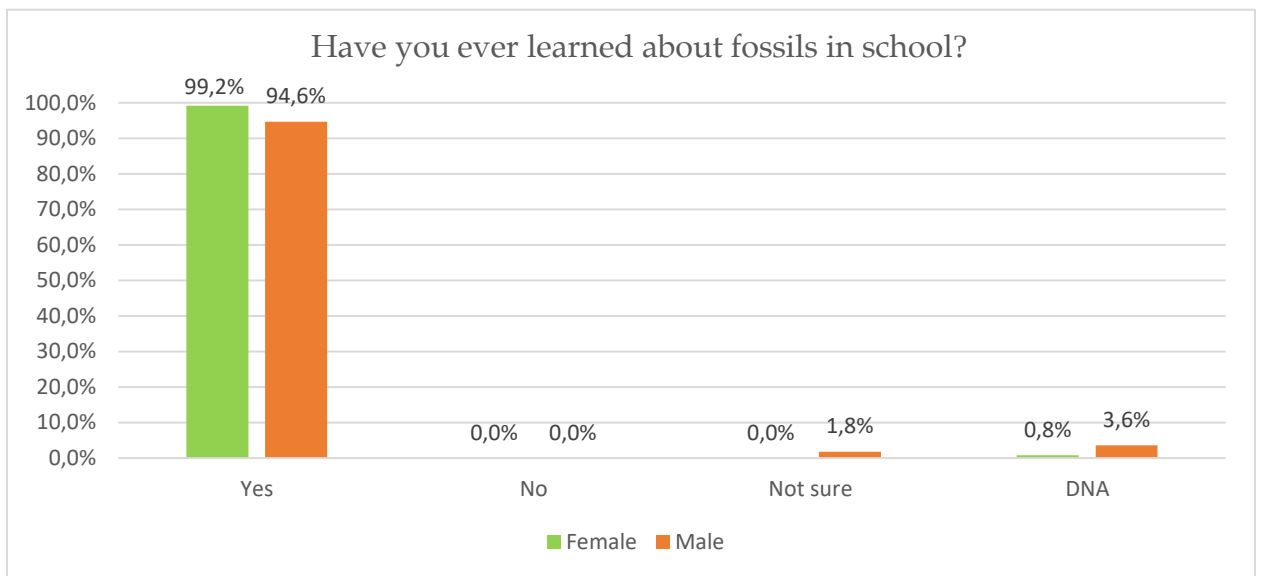
A3 It's boring

A4 I don't see it as something important to learn

A5 There are not enough field trips

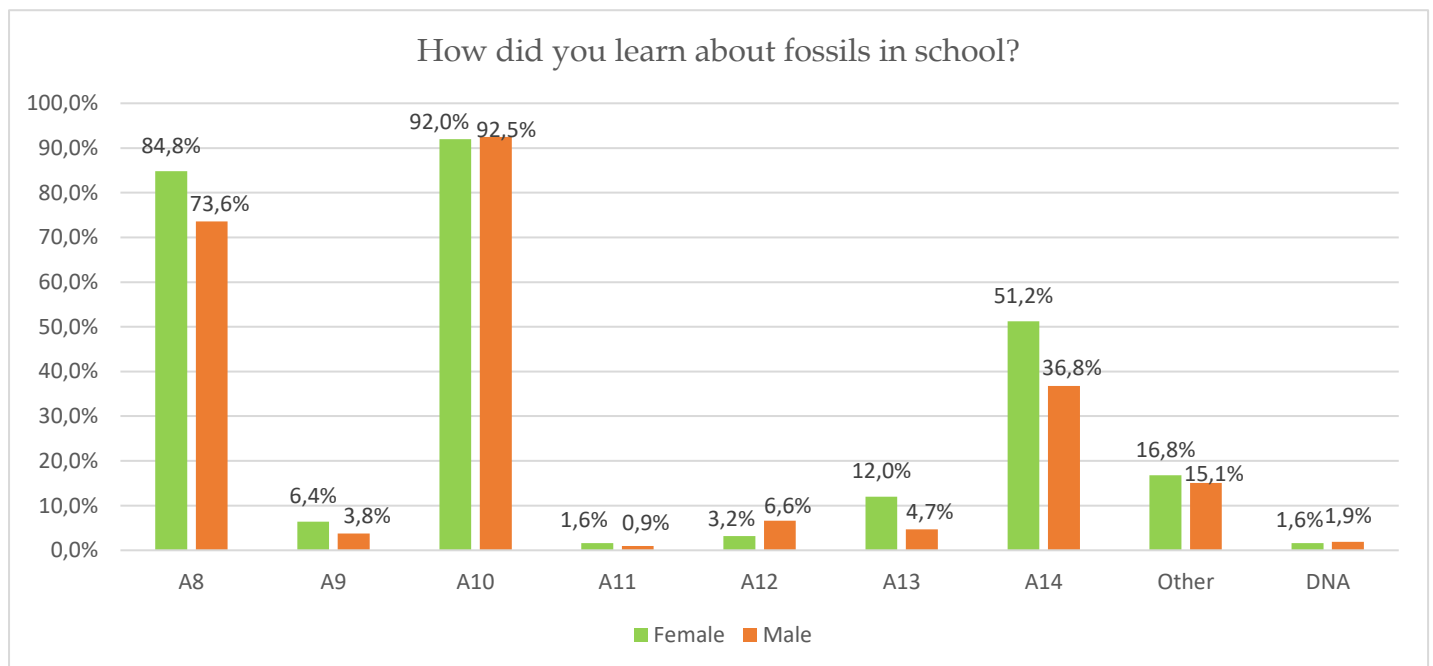
A6 I feel there is too much information

Graphic 3 includes the number of students who replied “No” to question 1, comprising a total of 23 girls and 24 boys. The graphic shows a similar significance on answers 1,2,3 and 6. This indicates that 56.5% of girls do not enjoy studying natural sciences because it's hard and confusing, with 41.7% and 45.8% of boys agreeing, respectively. However, a higher proportion of girls (60.9%) express feeling overwhelmed by the amount of information to learn compared with 45.8% of boys. Half the boys (50%) and 43.5% of girls consider the subject boring. Moreover, a smaller percentage (8.7%) of girls agree that natural sciences are not essential to learn, compared to boys with a higher percentage (20.8%). In girls, 13% agree that there are not sufficient field trips; for boys, this corresponds to a more significant percentage (33.3%). Furthermore, 17.4% of girls and 16.7% of boys added “Other”, citing that they don't like the subject because of dissatisfaction with the teacher, lack of interest in the subject, and some don't see any future use for it in their lives.



Graphic 4: Representation of the answers to question number four of the Life Sphere School in 7th Class Portuguese students.

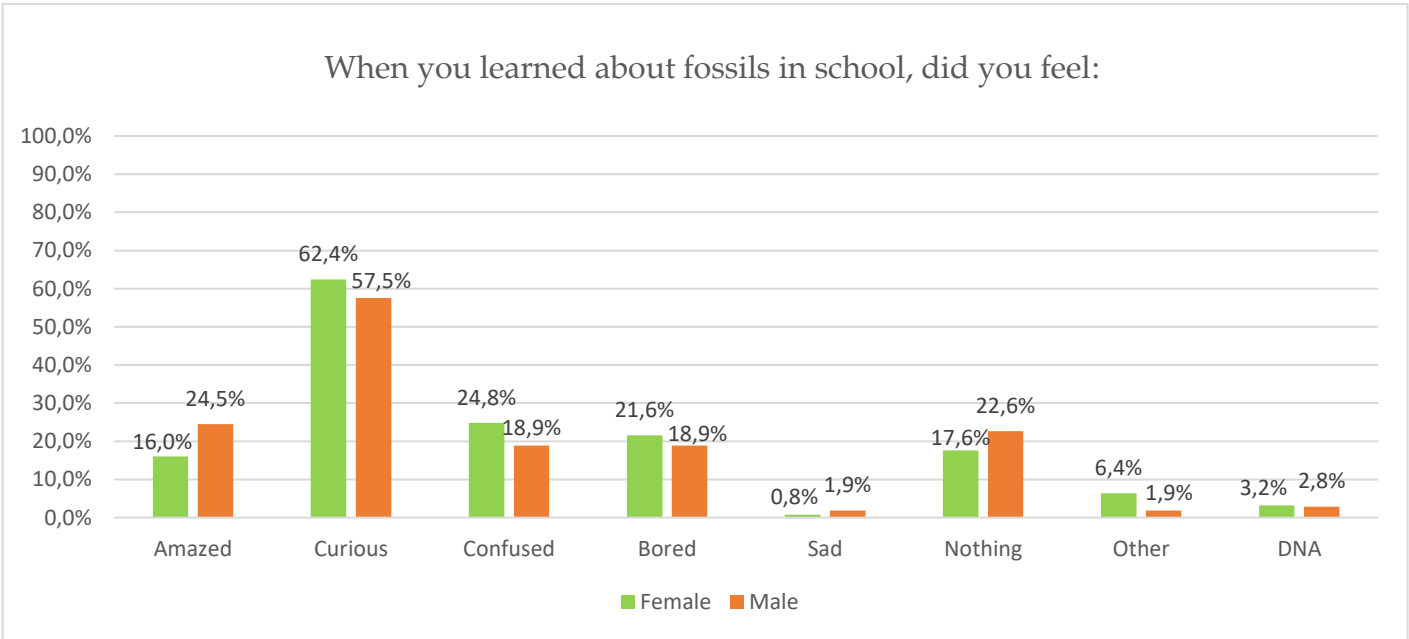
For this graphic, the entire sample of students, consisting of 126 girls and 112 boys, was examined. To this question, 99.2% of female and 94.6% of male students answered affirmatively, representing the most considerable percentage. None of the students in the 7th Class answered “No”, with only 1.8% of boys expressing uncertainty regarding discussing the topic in school.



Graphic 5: Representation of the answers to question number five of the Life Sphere School in 7th Class Portuguese students.

Description	
A8 School books	A12 Had a field trip to a museum or fossil site
A9 Other books (not a textbook)	A13 I looked at a website that had information about fossils
A10 The teacher spoke about it in class	A14 Watch a video in school
A11 A Palaeontologist visited my school and gave a talk	DNA Did Not Answer

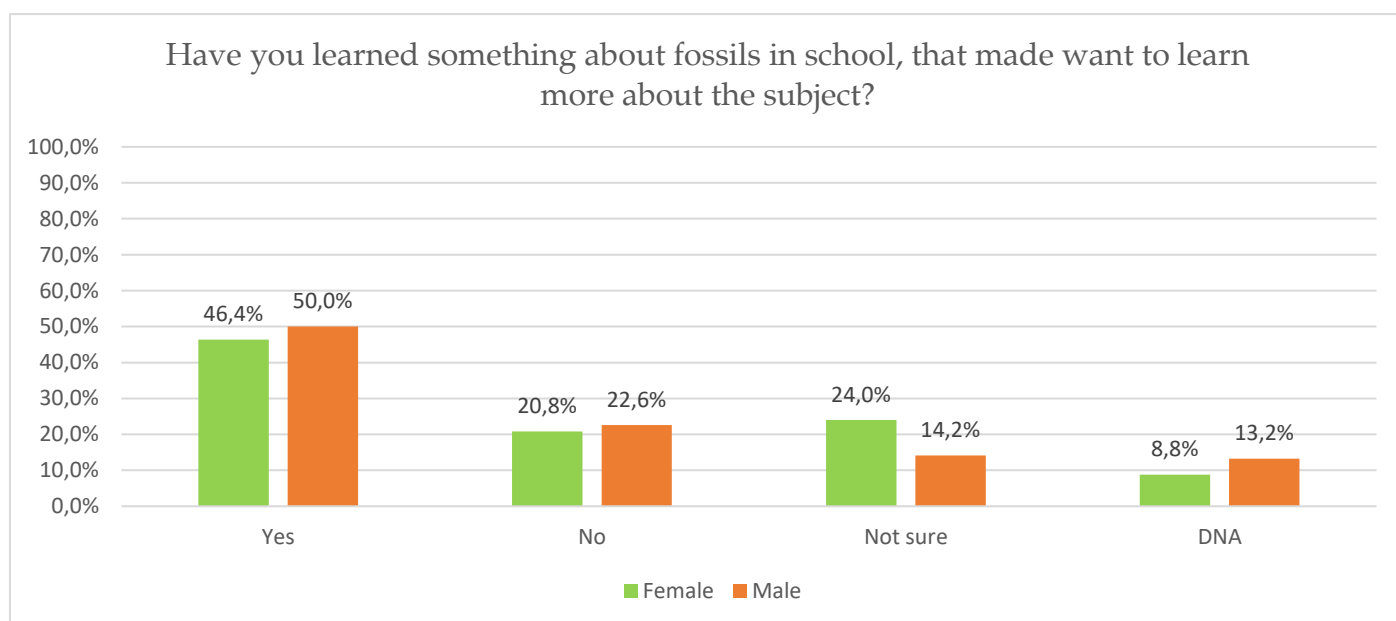
Graphic 5 exclusively includes responses from students who answered “Yes” to question 4, comprising 125 girls and 106 boys. Notably, for both genders, the most commonly chosen answer is number 10, discussed by the teacher in class, selected by 92% of girls and 92.5% of boys. Followed by school books with 84.8% of girls and 73.6% of boys. The third most prevalent response comes from over half the girls (51.2%) and 36.8% of the boys, who mentioned watching a video in school about fossils. Moreover, 16.8% of girls and 15.1% of boys selected “Other”, indicating learning about fossils through activities such as visits to the laboratory in school, a visit to a museum with family, school group projects, and looking for fossils in the school building as part of an activity within the class.



Graphic 6: Representation of the answers to question number six of the Life Sphere School in 7th Class Portuguese students.

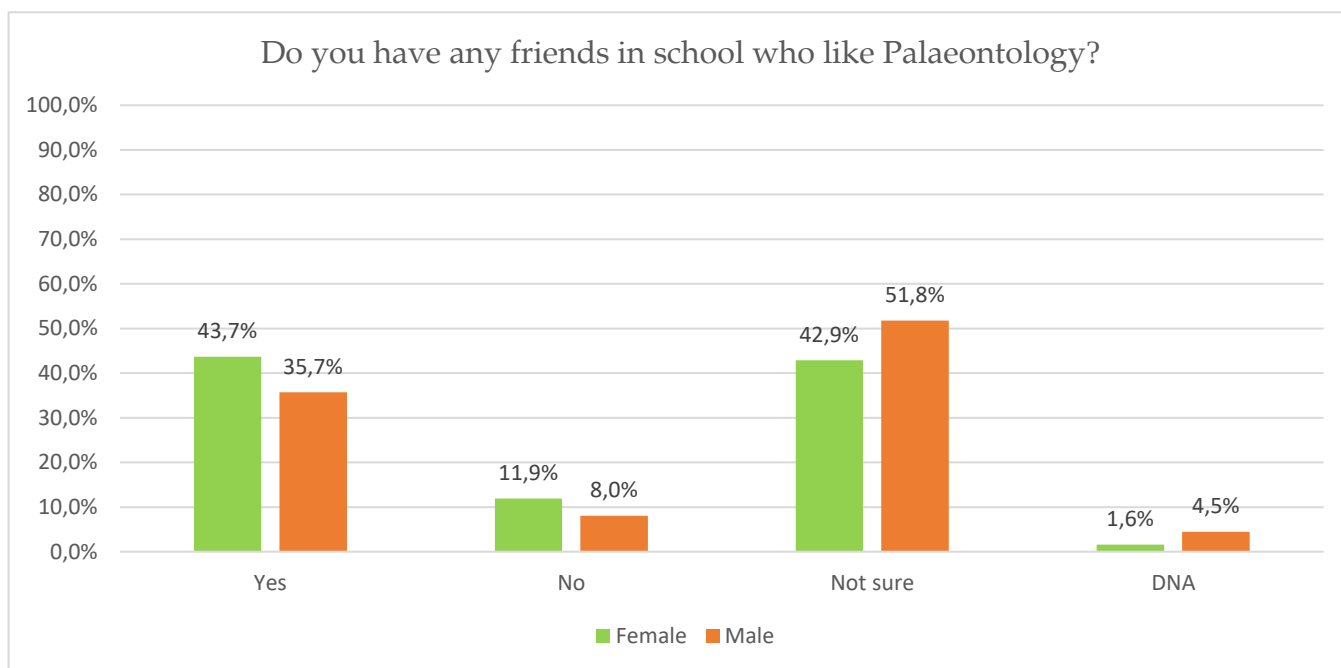
For this visual representation, the sample of students used consisted of those who replied affirmatively to question 4, totalling 125 girls and 106 boys. When queried about their emotions upon learning about fossils in school, the predominant sentiment among both genders was

Curiosity, with 62.4% of girls and 57.5% of boys expressing this feeling. Following curiosity, boys most commonly reported feeling Amazed (24.5%), whereas girls were more likely to feel Confused (24.8%). Boys' third most prevalent response was feeling Nothing (22.6%), while Boredom (21.6%) was for the girls. A small percentage of students, 0.8% of girls and 1.9% of boys, indicated feeling Sad when learning about fossils. Additionally, 6.4% of girls replied "Other", citing feelings such as excitement, encouragement and finding the subject challenging, while 1.9% of boys mentioned being interested and eager to delve deeper into the topic.



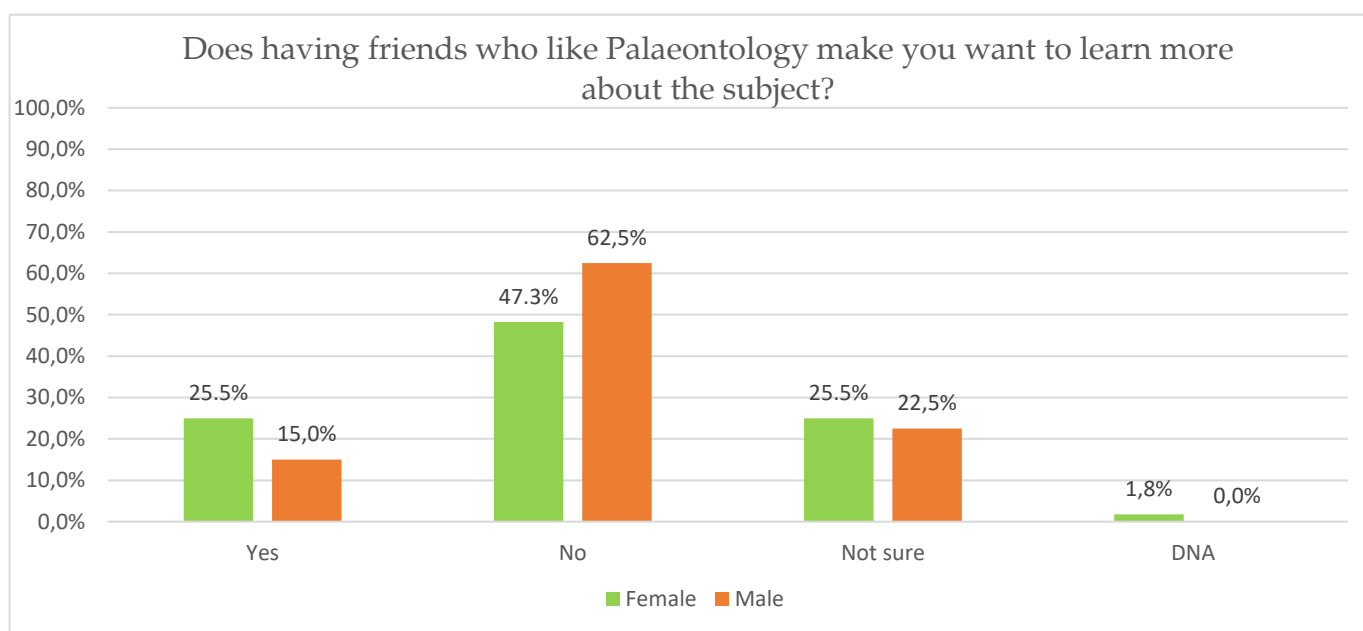
Graphic 7: Representation of the answers to question number seven of the Life Sphere School in 7th Class Portuguese students.

Graphic 7 utilises data from the student sample, 125 girls and 106 boys. The most predominant response for both genders is finding an interest in fossils when studying the subject, with 50% of boys and 46.4% of girls selecting the option "Yes." Additionally, a similar proportion of boys (22.6%) and girls (20.8%) answered "No". However, the second most common answer for girls (24%) was "Not sure", compared with 14.2% of boys.



Graphic 8: Representation of the answers to question number eight of the Life Sphere School in 7th Class Portuguese students.

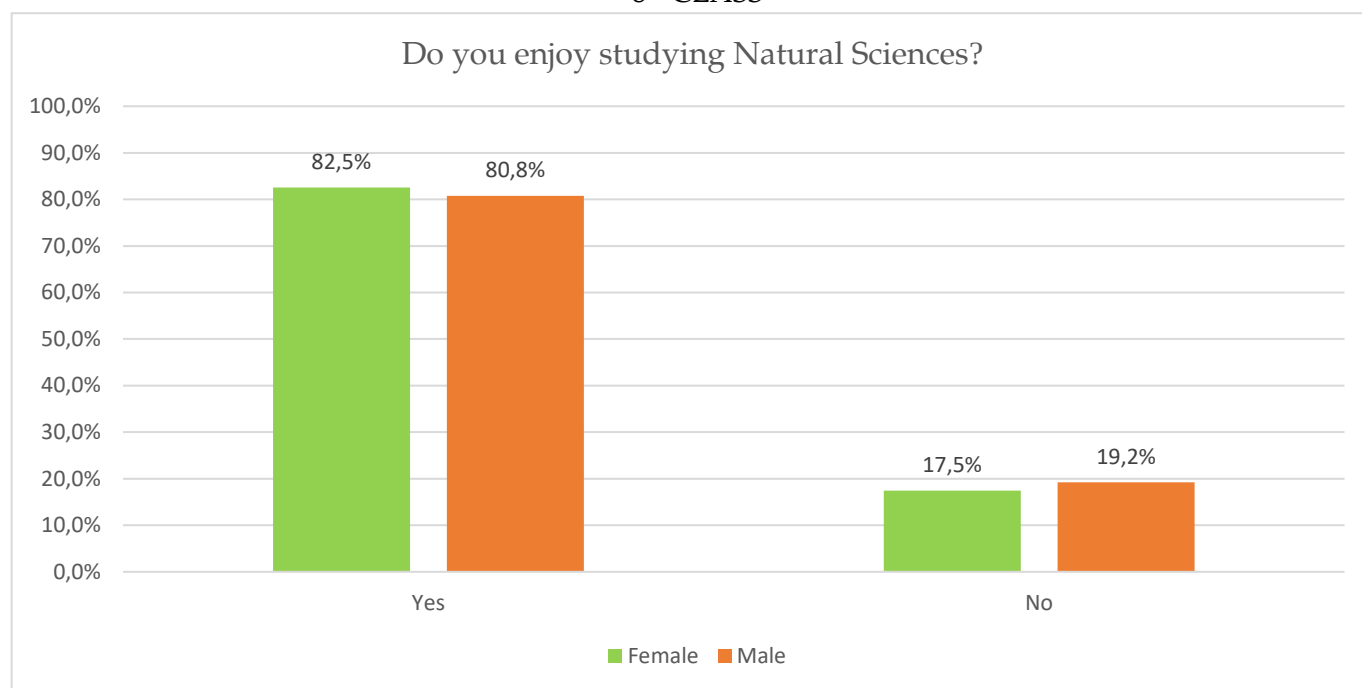
Graphic 8 presents data from the entire student sample, comprising 126 girls and 112 boys. When questioned whether they had friends in school who liked Palaeontology, most boys (51.8%) and 42.9% of girls were unsure. Among girls, “Yes,” counts for 43.7%, while for boys, it’s 35.7%. The smallest significant percentage corresponds to those who answered “No,” which is 11.9% for girls and 8% for boys.



Graphic 9: Representation of the answers to question number nine of the Life Sphere School in 7th Class Portuguese students.

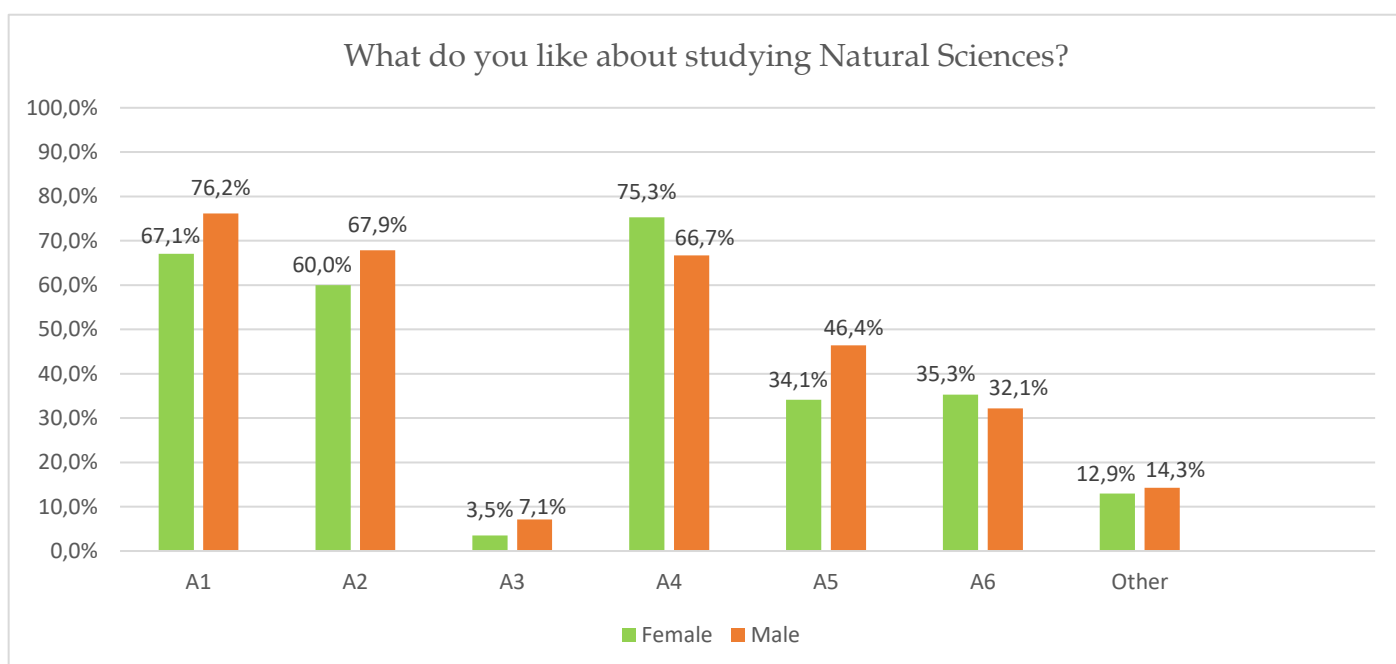
This graphic illustrates responses to question 9 among students who answered affirmatively to question eight. Consequently, the student sample comprises 55 girls and 40 boys. The predominant response among students of both genders was negative (47.3% girls and 62.5% boys). Equally noteworthy, 25.5% of girls responded “Yes”, while the same percentage expressed uncertainty. Among boys, 22.5% indicated uncertainty, and the smallest portion (15%) affirmed that having a friend interested in Palaeontology positively influences their interest in the subject.

8th CLASS



Graphic 10: Representation of the answers to question number one of the Life Sphere School in 8th Class Portuguese students.

This graphic represents a sample of 8th class female and male students, comprising 103 girls and 104 boys. The sample size of girls does not correspond to the entire students due to 2 invalid questions. The majority of both genders (82.5% girls and 80.8% boys) indicated that they enjoy studying natural sciences, while a smaller percentage (17.5% of girls and 19.2% of boys) answered that they did not enjoy the subject.

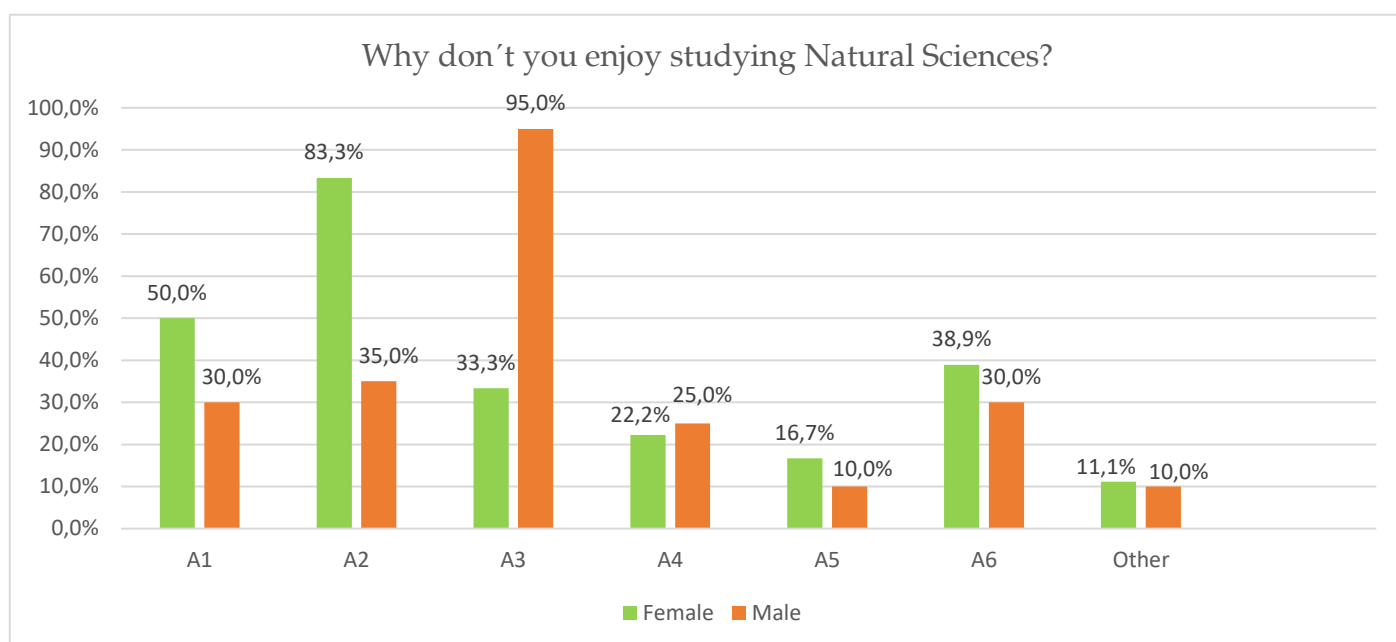


Graphic 11: Representation of the answers to question number two of the Life Sphere School in 8th Class Portuguese students.

Description

- | | |
|--------------------------------|--|
| A1 It's interesting | A4 I like to do experiments in the labs |
| A2 I like the teacher | A5 I like learning about how the world works |
| A3 I like the textbooks | A6 I like to be able to connect what I learn in class with real life outside school |

Graphic 11 includes the number of students who replied “Yes” to question 1, with 85 girls and 84 boys. Predominantly, the most common reasons cited by both genders for enjoying natural sciences are answers 1, 2 and 4. The most common answer for girls, 75.3%, is enjoying the experiments in the laboratory, with over half the boys (66.7%) agreeing. For boys, the most selected response (76.2%) was the fact that it has interesting topics, and 67.1% of girls selected the same answer. Next, liking the teacher has a big impact on girls (60%) and boys (67.9%) in terms of enjoying the subject. Additionally, nearly half of the boys (46.4%) enjoy it because they learn how the world works, the same as 34.1% of girls. Furthermore, 35.3% of girls say they enjoy the subject of natural sciences because they can connect what they learn in class with the world outside, as do 32.1% of boys. A smaller proportion of students (3.5% of girls and 7.1% of boys) say they like the textbooks, and 14.3% of boys selected “Other”, citing an interest in topics such as the Ocean, Earth and Space in addition to those topics and similar to 12.9% of girls they also like to learn about nature, animals, and the human body.



Graphic 12: Representation of the answers to question number three of the Life Sphere School in 8th Class Portuguese students.

Description

A1 It's hard

A2 It's confusing

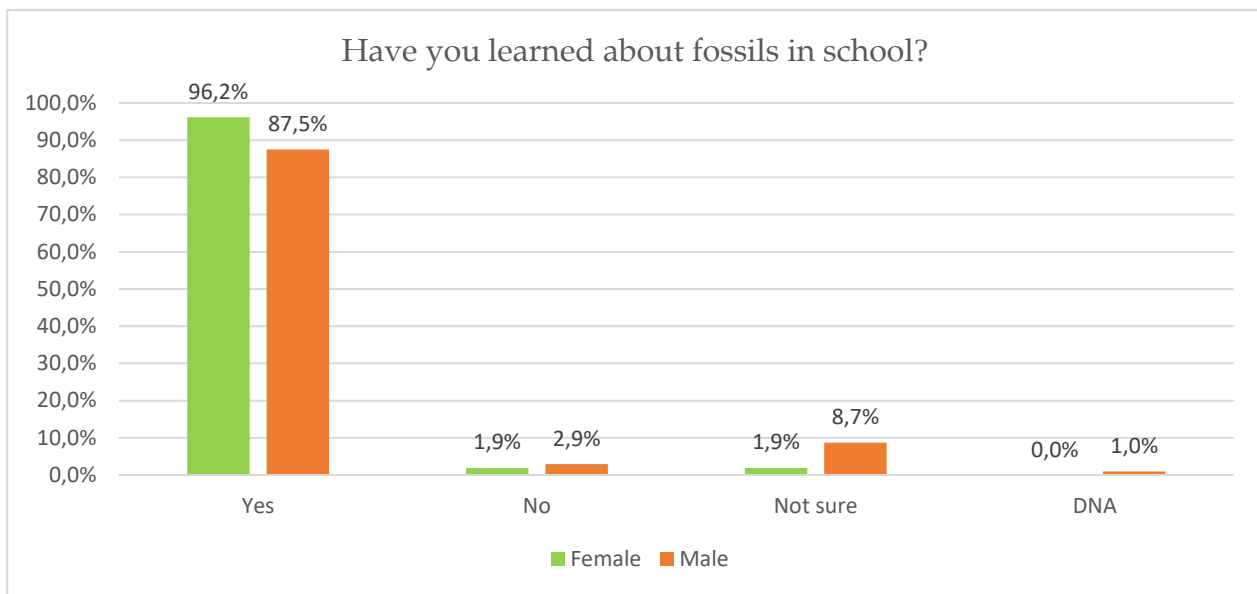
A3 It's boring

A4 I don't see it as something important to learn

A5 There are not enough field trips

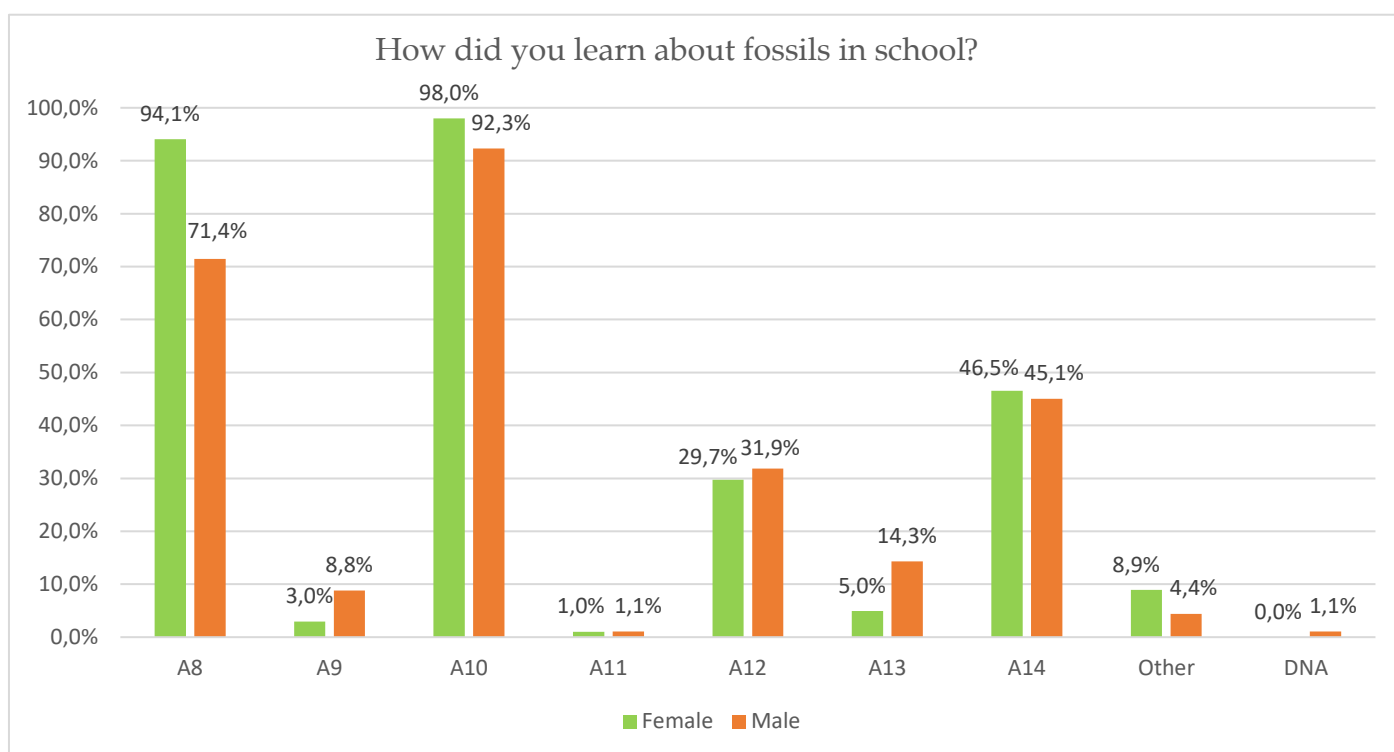
A6 I feel there is too much information

Graphic 12 includes the number of students who replied “No” to question 1, comprising a total of 18 girls and 20 boys. The graphic shows that 95% of boys don't like the subject because they think it is boring, compared with 33.3% of girls. For female students, the most common answer, with 83.3%, is that they think it's confusing, and 35% of boys agree. Half the girls (50%) say natural sciences are hard, and 38.9% selected that it is too much information to learn. For boys, the percentage for both answers is the same (30%). Moreover, 22.2% of girls and 25% of boys agree that natural sciences are not essential to learning. Furthermore, 11.1% of female students added on option “Other”, a lack of interest in the subject, and 10% of boys added dissatisfaction with the teacher.



Graphic 13: Representation of the answers to question number four of the Life Sphere School in 8th Class Portuguese students.

For this graphic, the entire sample of students, consisting of 105 girls and 104 boys, was examined. To this question, 96.2% of female and 87.5% of male students answered affirmatively, representing the most considerable percentage. Only a small percentage of the sample responded “No”, 2.9% of boys and 1.9% of girls, and with male (8.7%) and 1.9% of female students unsure if they learned about fossils in school.



Graphic 14: Representation of the answers to question number five of the Life Sphere School in 8th Class Portuguese students.

Description

A8 School books

A9 Other books (not a textbook)

A10 The teacher spoke about it in class

A11 A Palaeontologist visited my school and gave a talk

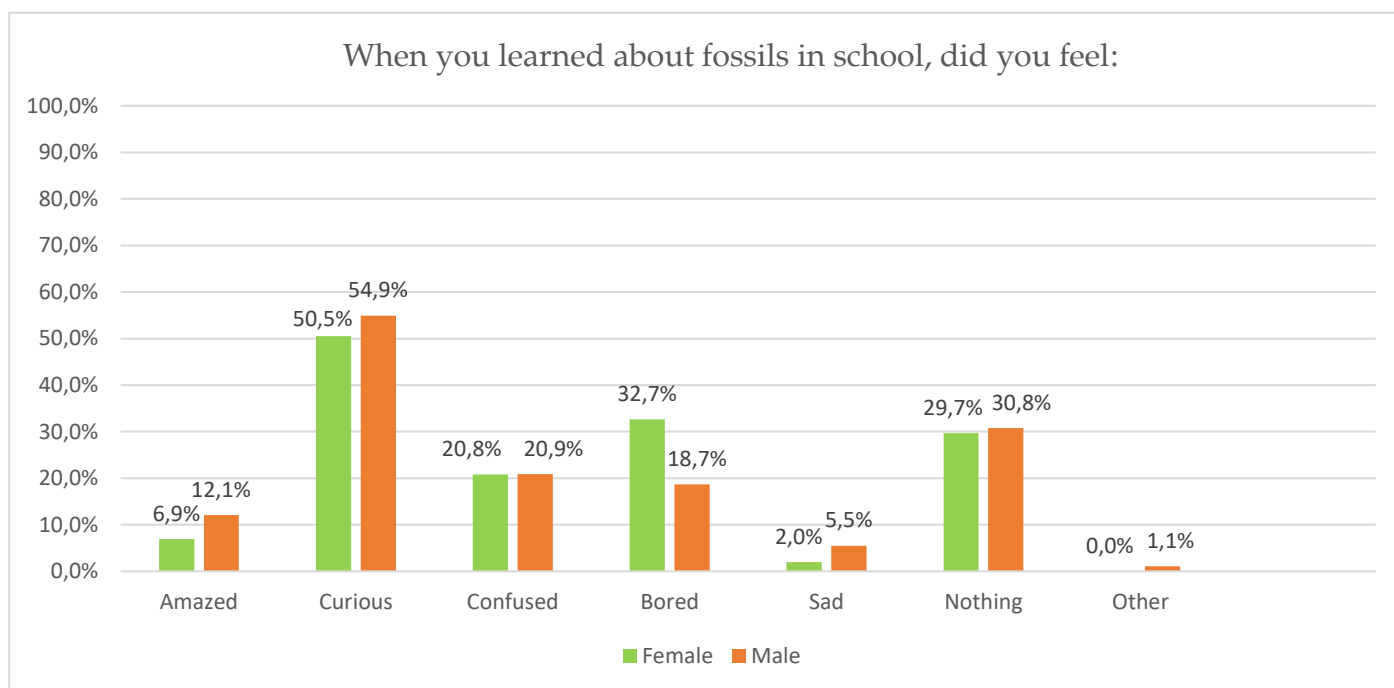
A12 Had a field trip to a museum or fossil site

A13 I looked at a website that had information about fossils

A14 Watch a video in school

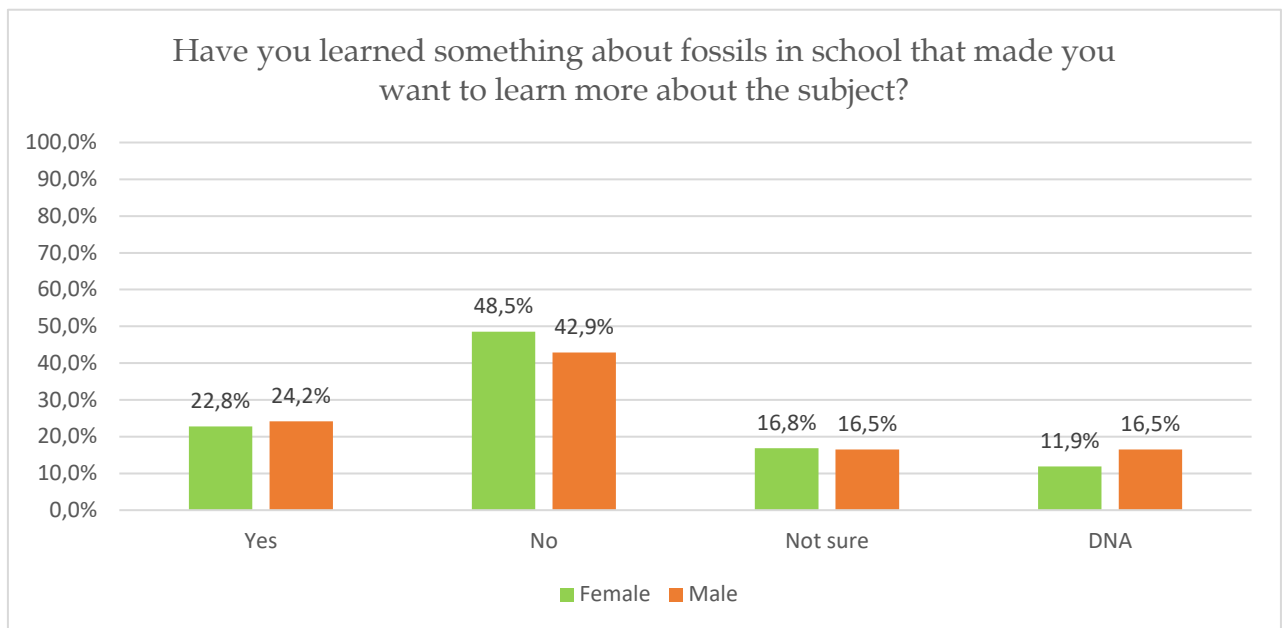
DNA Did Not Answer

Graphic 14 only includes responses from students who answered “Yes” to question 4, comprising 101 girls and 91 boys. With nearly 100%, answer 10 was the most selected among both genders (98% girls and 92.3% boys), representing the subject discussed by the teacher in class. Followed by school books with 94.1% of girls and 71.4% of boys. The third most prevalent response comes from nearly half the sample (46.5% of girls and 45.1% of the boys) who mentioned watching a video in school about fossils. Moreover, 29.7% of girls and 31.9% of boys have visited a museum or fossil site. Additionally, 8.9% of girls and 4.4% of boys selected “Other”, indicating learning about fossils through activities such as visits to the laboratory in school and seeing samples in class.



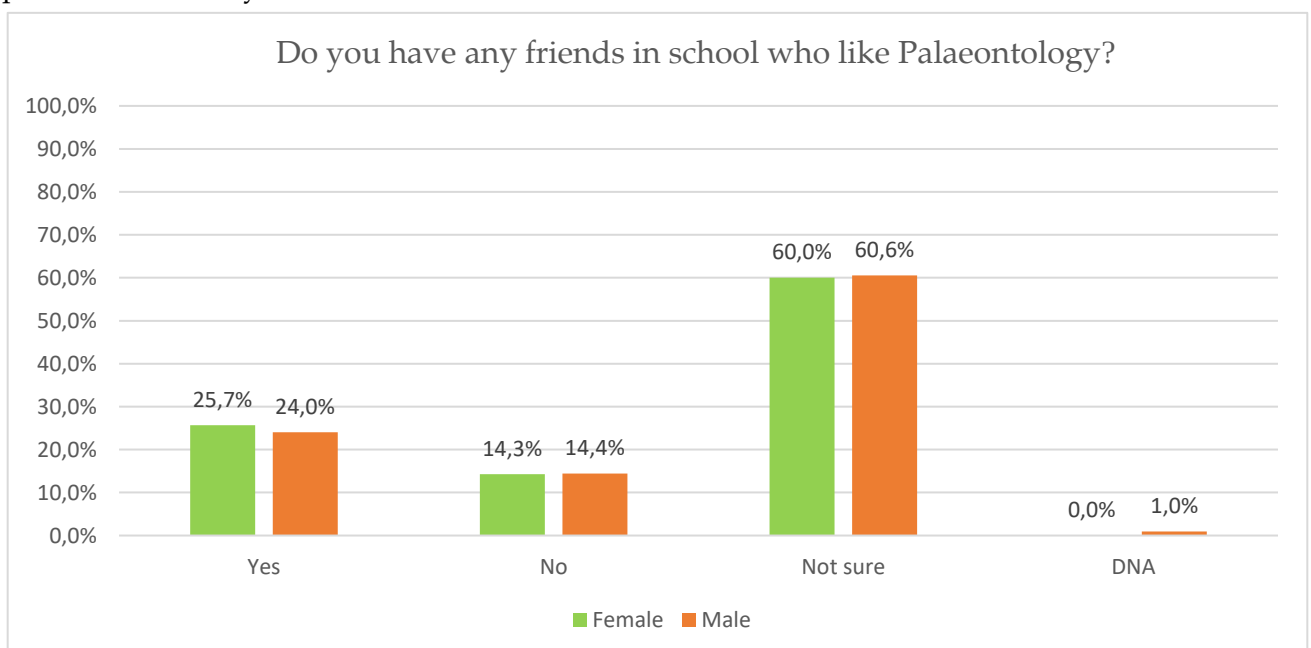
Graphic 15: Representation of the answers to question number six of the Life Sphere School in 8th Class Portuguese students.

For this graphic, the sample of students consisted of those who replied affirmatively to question 4, totalling 101 girls and 91 boys. When queried about their emotions upon learning about fossils in school, the predominant sentiment among both genders was Curiosity, with 50.5% of girls and 54.9% of boys expressing this feeling. Following curiosity, boys most commonly reported feeling Nothing (30.8%), whereas girls were likelier to feel Bored (32.7%). Boys' third most prevalent response was feeling Confused (20.9%), while Nothing (29.7%) for the girls. Only a small percentage of students, 6.9% of girls and 12.1% of boys, indicated feeling Amazed when learning about fossils. Additionally, 1.1% of male students added an "Other" feeling, which was excitement.



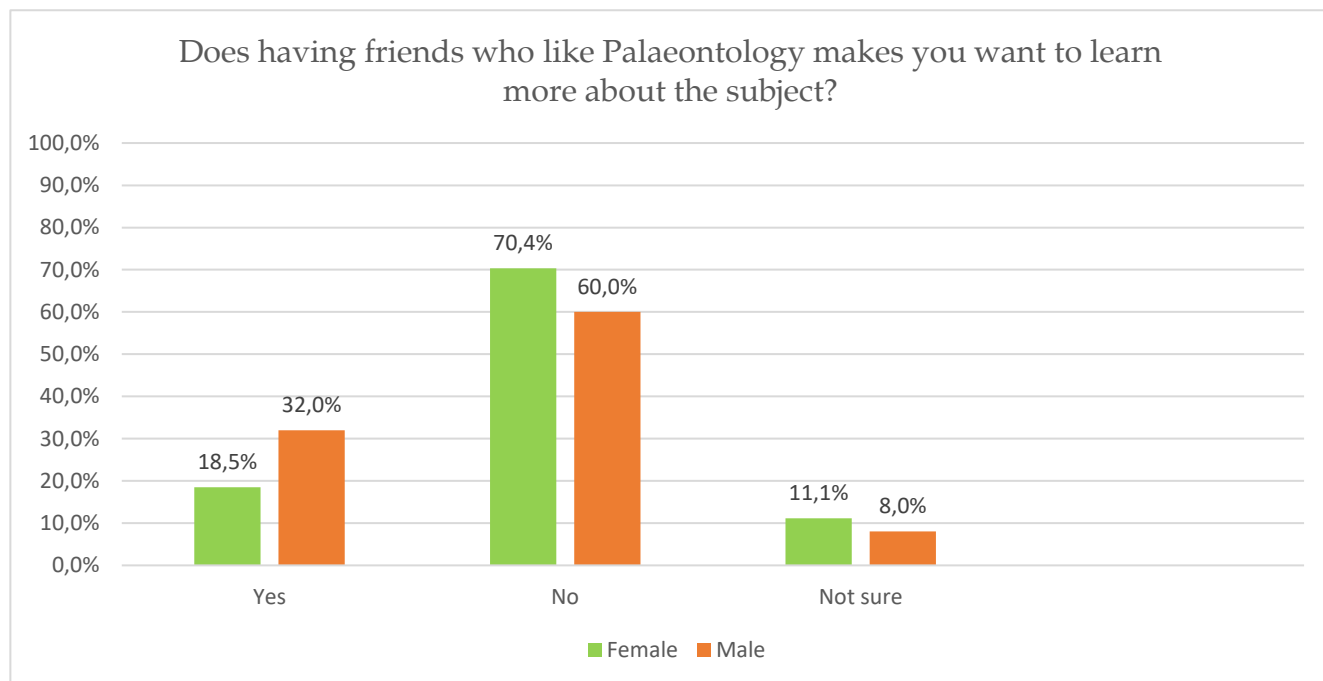
Graphic 16: Representation of the answers to question number seven of the Life Sphere School in 8th Class Portuguese students.

Graphic 16 utilises data from the student sample of 101 girls and 91 boys. The most predominant response for both genders is not finding an interest in fossils when studying the subject, with 48.5% of girls and 42.9% of boys selecting the option “No.” Additionally, only 22.8% of girls and 24.2% of boys replied “Yes” to question seven, and 16.8% of girls and 16.5% of boys expressed uncertainty.



Graphic 17: Representation of the answers to question number eight of the Life Sphere School in 8th Class Portuguese students.

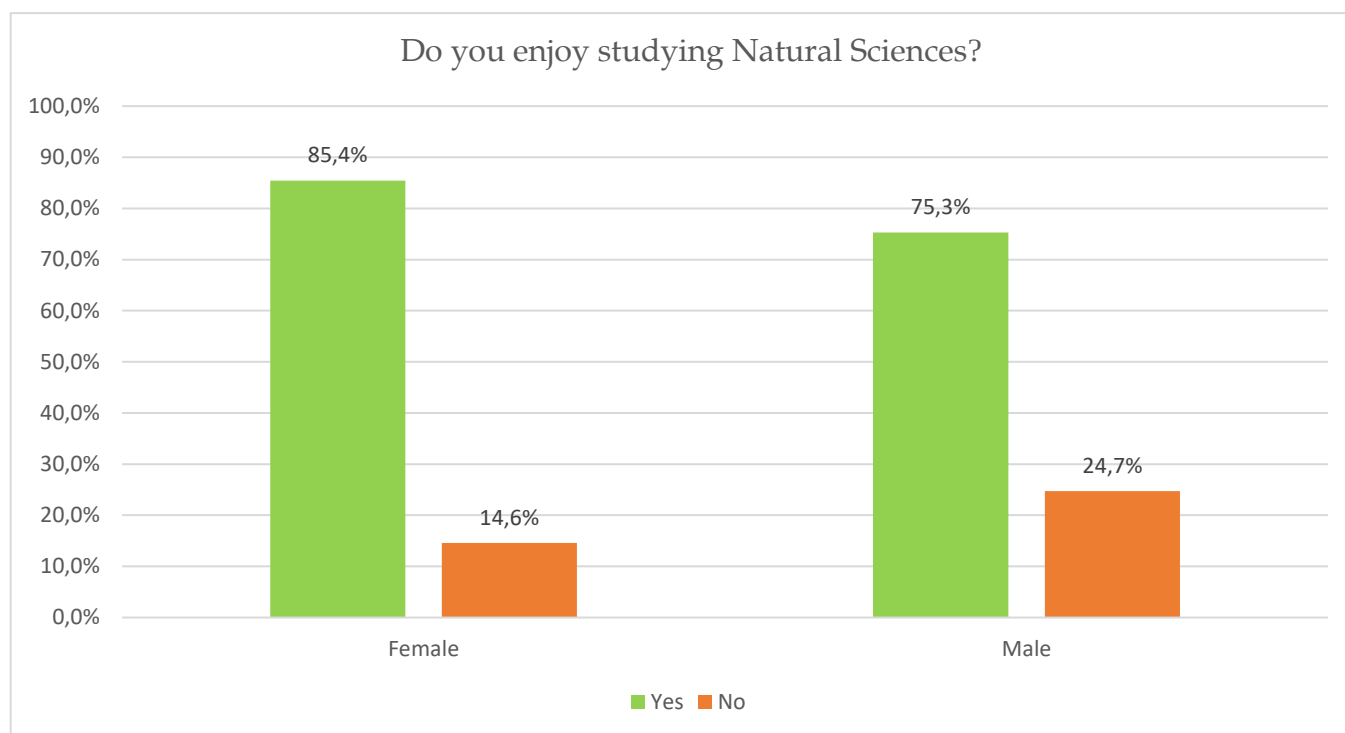
In graphic 17, the data is taken from the entire sample of female and male students: 105 girls and 104 boys. When asked if they had friends in school who liked Palaeontology, more than half the boys and girls (60%) were unsure. After that, the second most relevant percentage is an affirmative response, with 25.7% of girls and 24% of boys. The smallest substantial percentage is “No”, 14.4% for boys and 14.3% for girls.



Graphic 18: Representation of the answers to question number nine of the Life Sphere School in 8th Class Portuguese students.

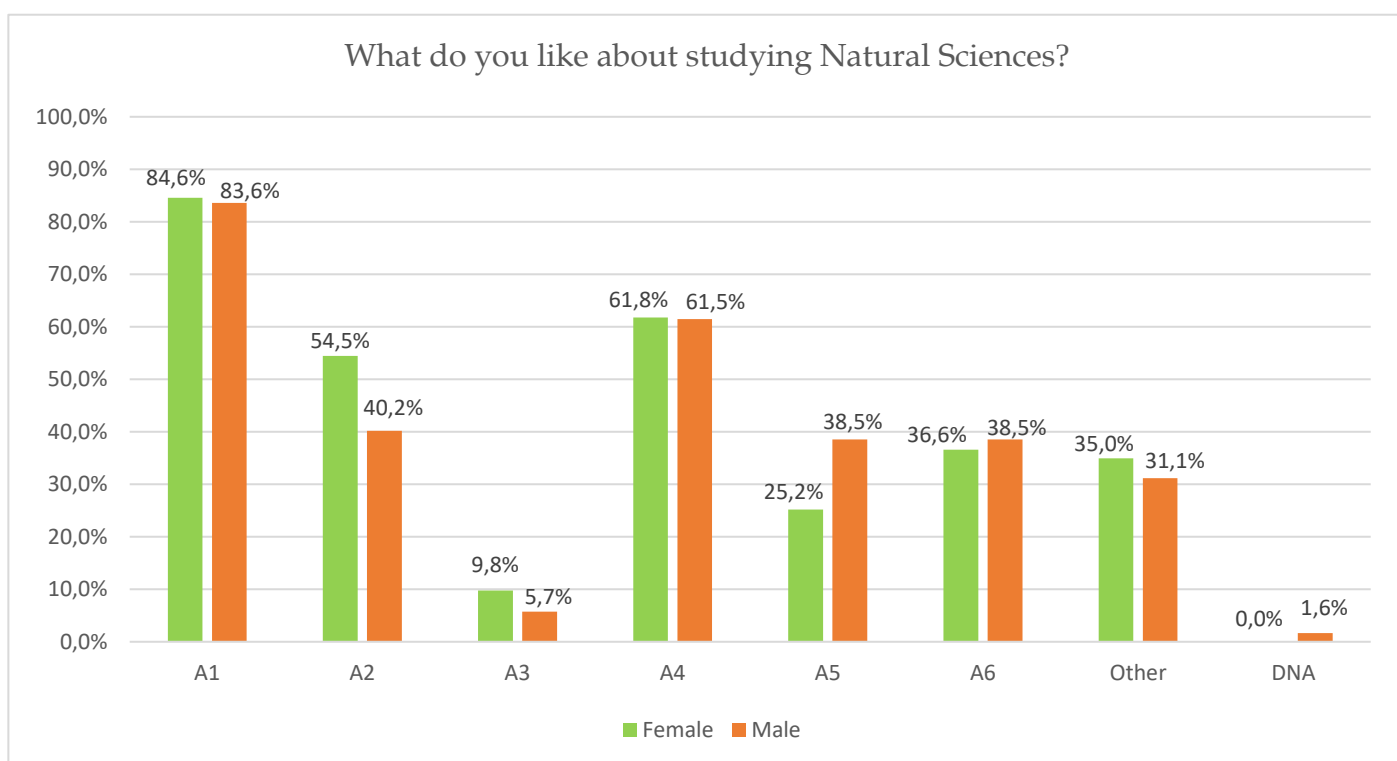
This graphic depicts the responses to question 9 among students who answered affirmatively to question eight. Therefore, the student sample consists of 27 girls and 25 boys. The prevailing response among students of both genders was negative (70.4% girls and 60% boys). The affirmative responses include 32% of boys and 18.5% of girls. The smallest percentage, 11.1% for girls and 8% for boys was comprised of students who indicated uncertainty.

9th CLASS



Graphic 19: Representation of the answers to question number one of the Life Sphere School in 9th Class Portuguese students.

Graphic 19 represents a sample of 9th class female and male students, comprising 144 girls and 162 boys. The majority of both genders (85.4% girls and 75.3% boys) indicated that they enjoy studying Natural Sciences. In comparison, a smaller percentage (24.7% of boys and 14.6% of girls) answered that they do not enjoy the subject.



Graphic 20: Representation of the answers to question number two of the Life Sphere School in 9th Class Portuguese students.

Description

A1 It's interesting

A2 I like the teacher

A3 I like the textbooks

DNA Did Not Answer

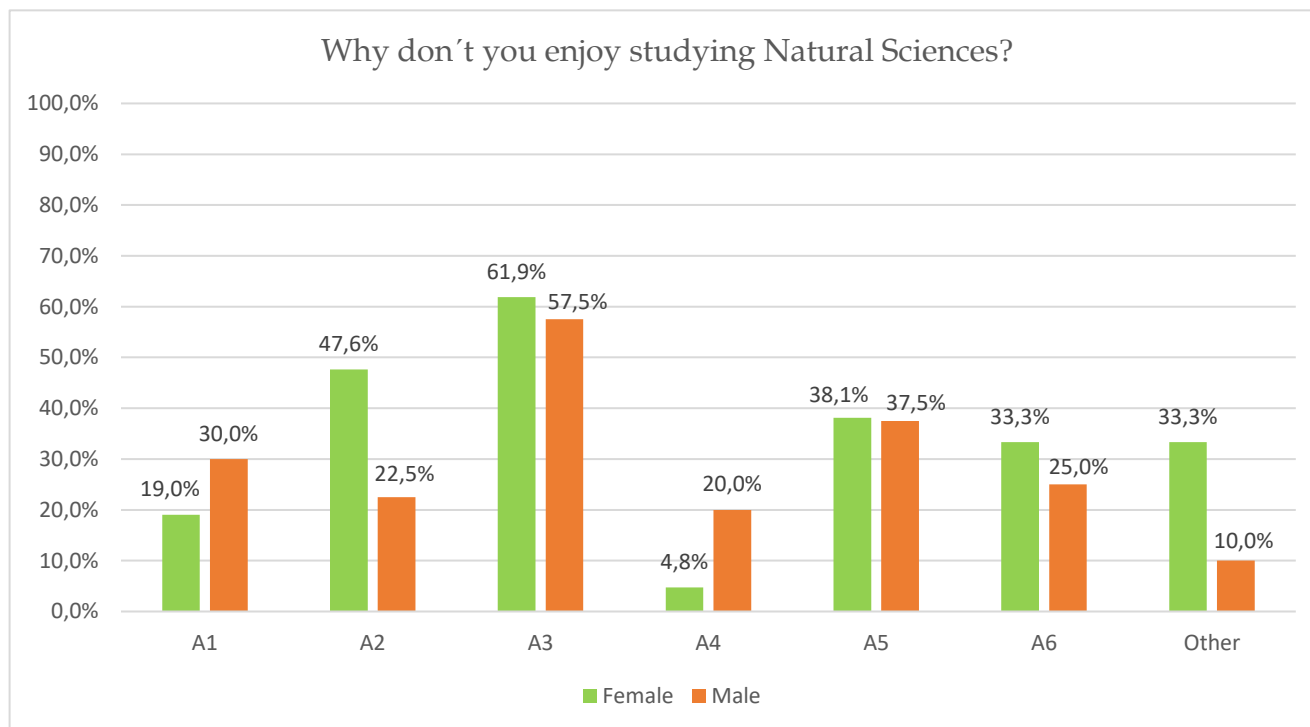
A4 I like to do experiments in the labs

A5 I like learning about how the world works

A6 I like to be able to connect what I learn in class with real life outside school

Graphic 20 includes the number of students who replied "Yes" to question 1. This includes 123 girls and 122 boys. Immediately, the most common response by girls and boys about enjoying natural sciences is that they find it interesting (84.6% of girls and 83.6% of boys). This is followed by answer 4, which corresponds to them enjoying the experiments in the laboratory (61.8% of girls and 61.5% of boys). After that, liking the teacher is also a big reason for students in the 9th class to enjoy natural sciences (54.5% of girls and 40.2% of boys). A smaller proportion of students (9.8% of girls and 5.7% of boys) say they like the textbooks. Answers 5 and 6, enjoying learning about how the world works and connecting what they learn in class with real life, show similar percentages (38.5% for boys and 25.2% to 36.6% for girls). A percentage of boys (31.1%) selected "Other", adding that they enjoy the subject because they learn

about vulcanology, geology, natural sciences and in addition to those topics and similar to 35% of girls also added the human body, nature, animals, life on Earth and genetics.



Graphic 21: Representation of the answers to question number three of the Life Sphere School in 9th Class Portuguese students.

Description

A1 It's hard

A2 It's confusing

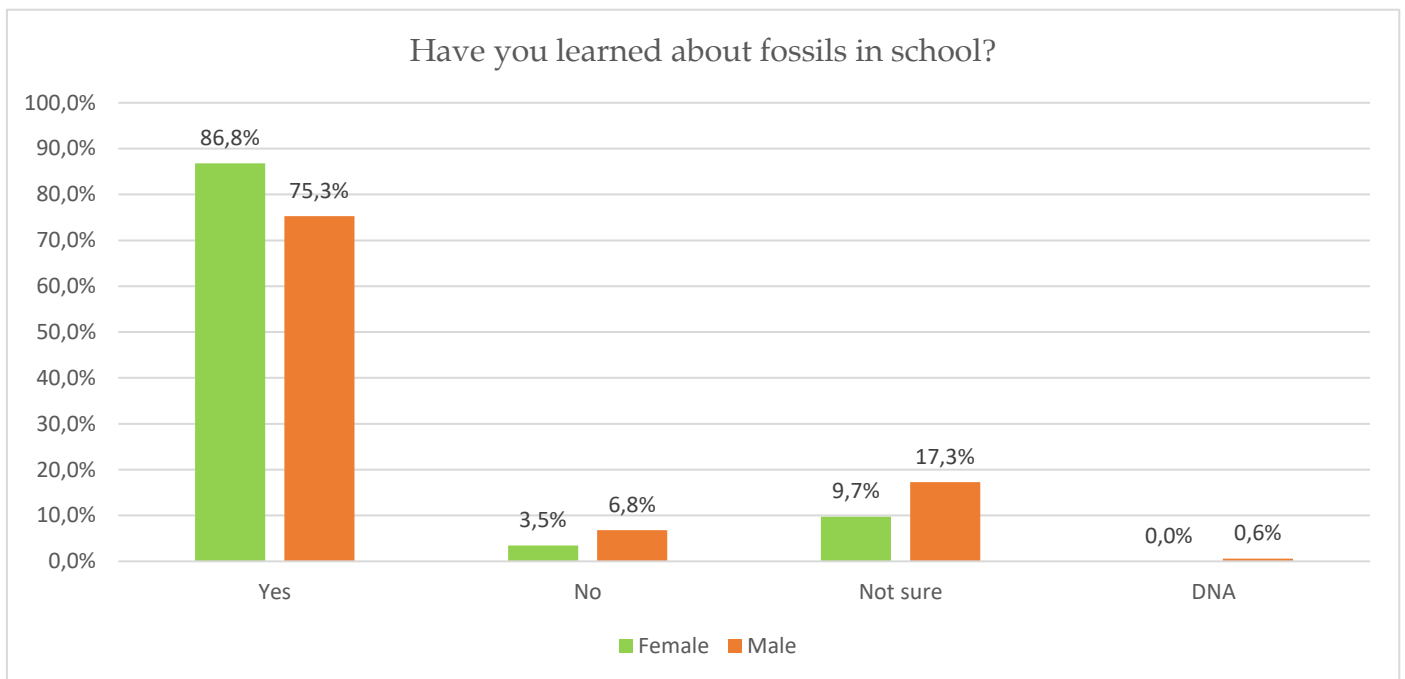
A3 It's boring

A4 I don't see it as something important to learn

A5 There are not enough field trips

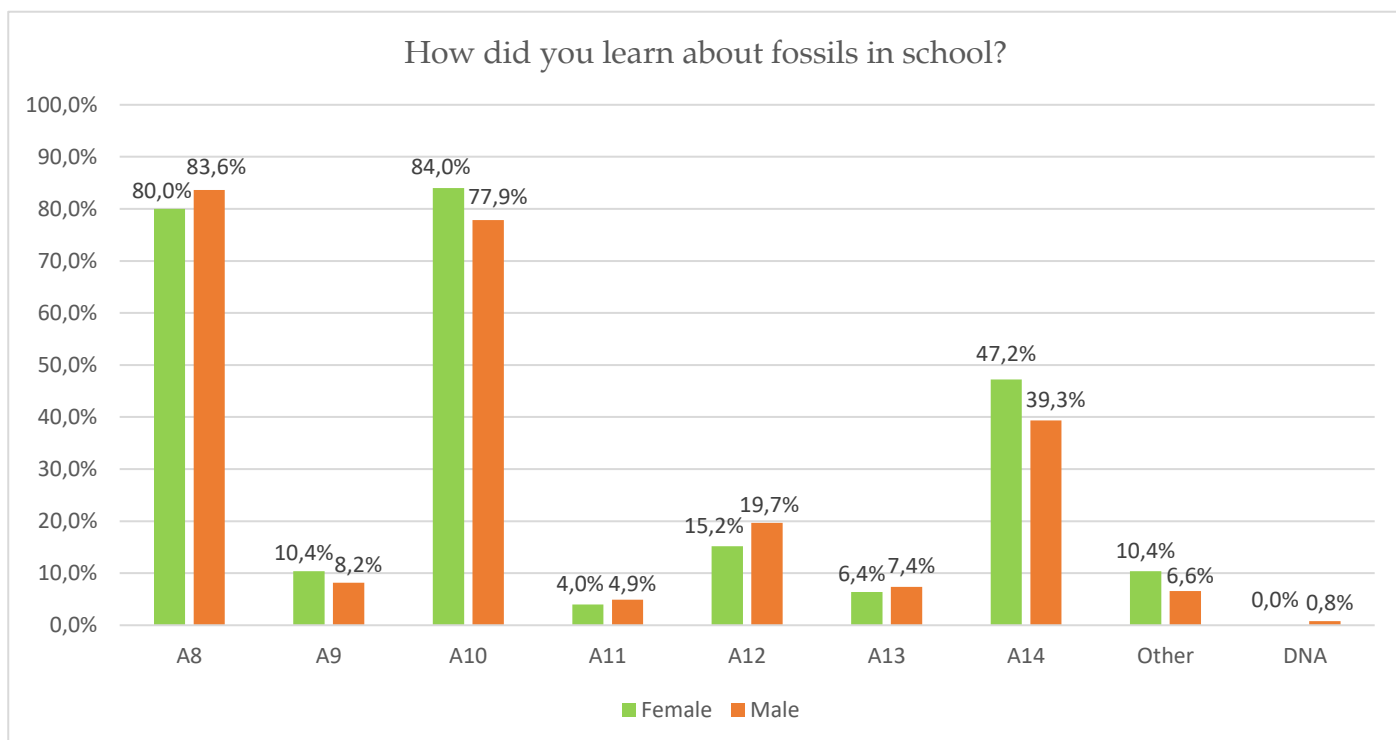
A6 I feel there is too much information

Graphic 21 includes the number of students who replied “No” to question 1, comprising a total of 21 girls and 40 boys. The graphic shows that the most predominant reason why the students don't enjoy the subject of natural sciences is that they find it boring (61.9% of girls and 57.5% of boys). For female students, the second most common answer, with 47.6%, is that they think it's confusing, and for the boys (37.5%), they think there are not enough field trips, while 38.1% of girls agree. Additionally, 30% of boys and 19% of girls say natural sciences are hard, and 33.3% of girls and 25 % of boys agree it is too much information to learn. A small percentage of students (20% of boys and 4.8% of girls) feel that natural sciences are not essential to learning. Furthermore, 33.3%% of female and 10% of male students selected “Other”, citing a lack of interest in the subject, dissatisfaction with the teacher, and repetitive topics.



Graphic 22: Representation of the answers to question number four of the Life Sphere School in 9th Class Portuguese students.

For this graphic, the entire student sample, consisting of 144 girls and 162 boys, was studied. To this question, 86.8% of female and 75.3% of male students answered affirmatively. The second most relevant percentage was students who presented uncertainty (9.7% of girls and 17.3% of boys). Only a small percentage of the sample responded “No,” 6.8% of boys and 3.5% of girls.



Graphic 23: Representation of the answers to question number five of the Life Sphere School in 9th Class Portuguese students.

Description

A8 School books

A9 Other books (not a textbook)

A10 The teacher spoke about it in class

A11 A Palaeontologist visited my school and gave a talk

A12 Had a field trip to a museum or fossil site

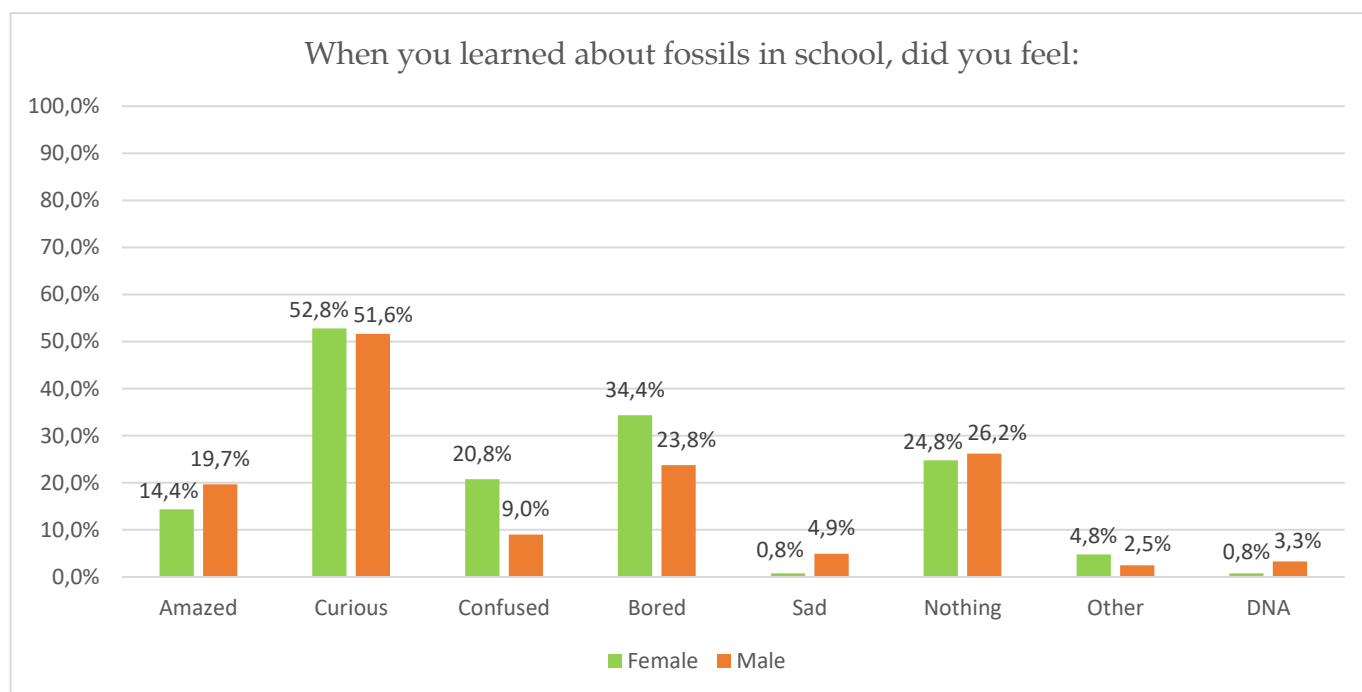
A13 I looked at a website that had information about fossils

A14 Watch a video in school

DNA Did Not Answer

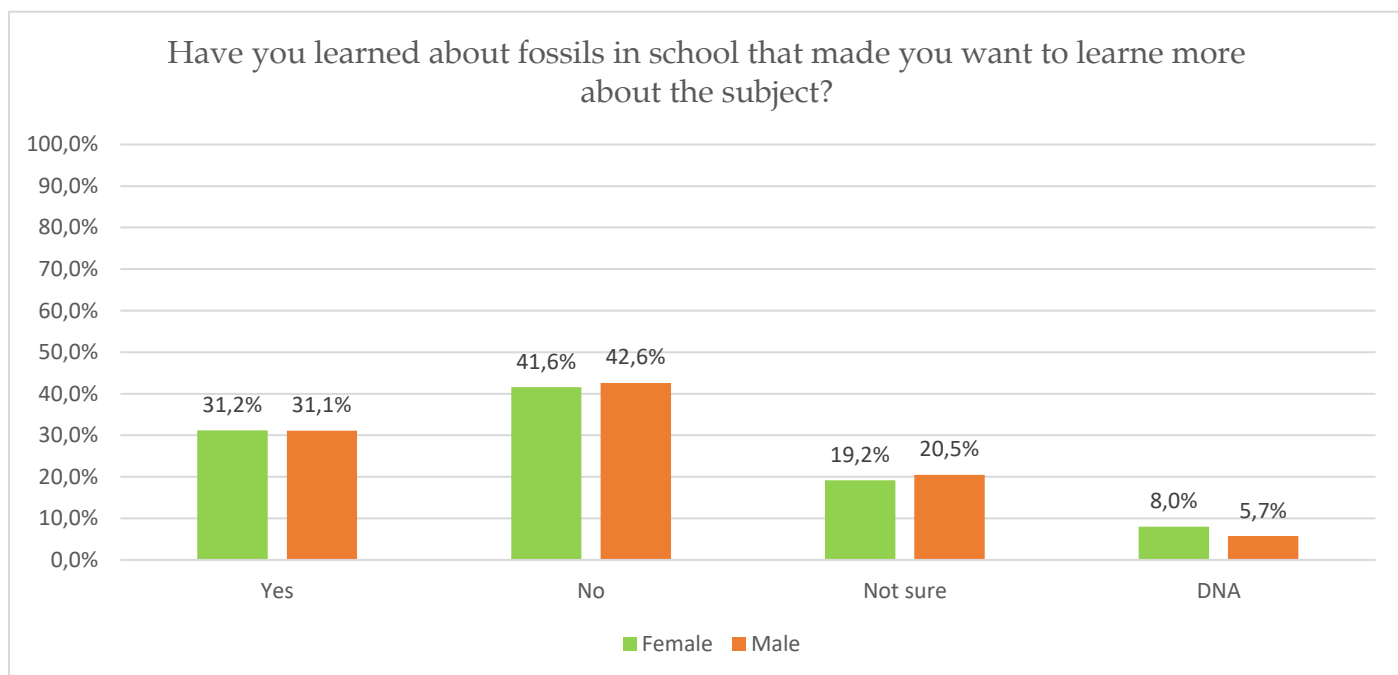
Graphic 23 includes responses from students who answered “Yes” to question 4. This includes 125 girls and 122 boys. Clearly, the two most opted answers were 8 and 10, with 80% of girls and 83.6% of boys selecting they have learned about fossils in the school books, and 84% of girls and 77.9% of boys selected that they heard the teacher speaking about it in class. The third most common response is watching a video in school (47.2% of girls and 39.3% of boys). As the option “Other”, 10.4% of girls added visiting museums with family, school group projects and watching cartoons with dinosaurs as a child, while boys (6.6%) also added learning about

fossils through activities such as visits to the laboratory in school, looking for fossils in the school permises and seeing samples in class.



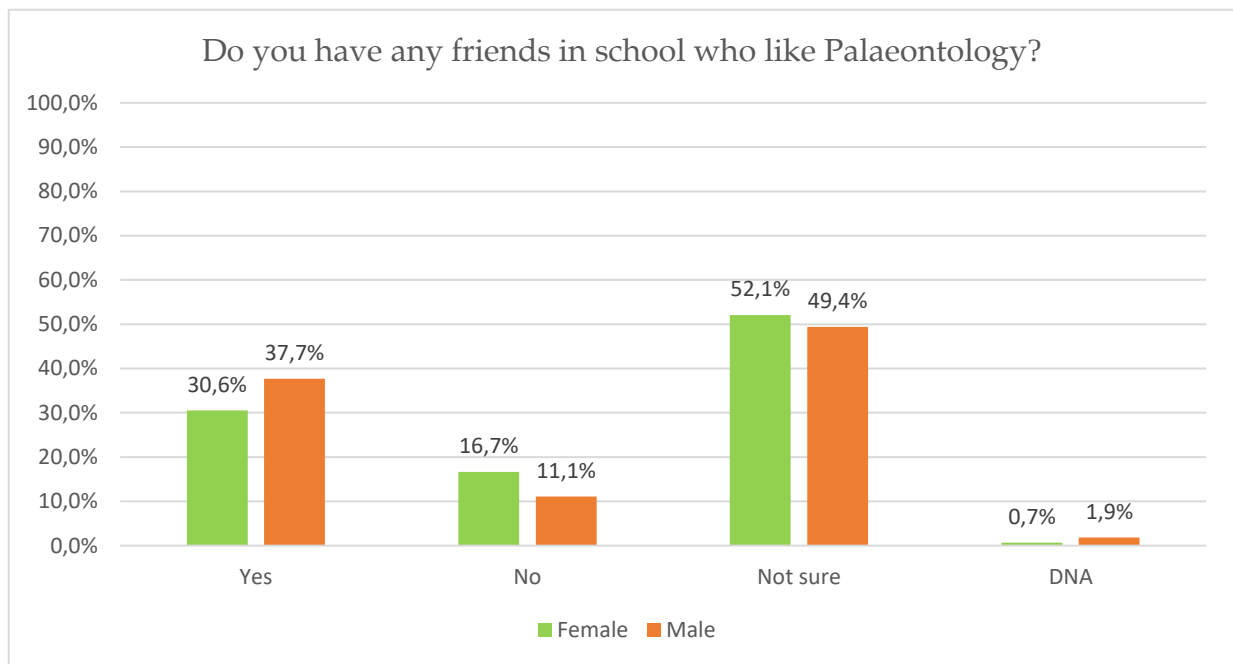
Graphic 24: Representation of the answers to question number six of the Life Sphere School in 9th Class Portuguese students.

For graphic 24, the sample of students consisted of those who replied affirmatively to question 4, totalling 125 girls and 122 boys. When queried about their emotions upon learning about fossils in school, the predominant sentiment among both genders was Curiosity, with 52.8% of girls and 51.6% of boys expressing this feeling. Following curiosity, boys most commonly reported feeling Nothing (26.2%), whereas girls were more likely to feel Bored (34.4%); for boys, boredom was the third most common response (23.8%), while for girls was Nothing (24.8%). More girls (20.8%) felt confused than amazed (14.4%), which, compared to boys, was the opposite 19.7% referred to being amazed, while 9% said they felt confused. Furthermore, 4.8% of girls also added “Other”, a sentiment of excitement, tiredness and interest, while boys (2.5%) included happiness and that they already knew everything that was to be learned about fossils.



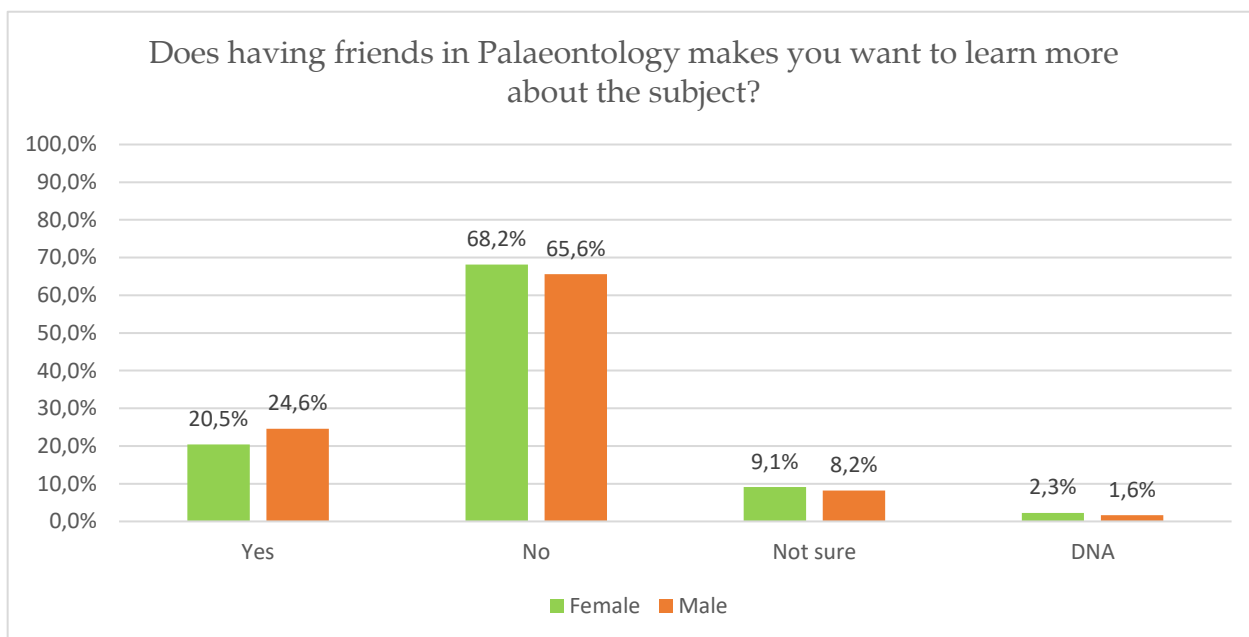
Graphic 25: Representation of the answers to question number seven of the Life Sphere School in 9th Class Portuguese students.

Graphic 25 utilises data from the student sample of 125 girls and 122 boys. The most predominant response for both genders is not finding an interest in fossils when studying the subject, with 41.6% of girls and 42.6% of boys selecting the option “No.” The second most common response, 31.2% of girls and 31.1% of boys, was “Yes” to question seven, with 19.2% of girls and 20.5% of boys demonstrating uncertainty.



Graphic 26: Representation of the answers to question number eight of the Life Sphere School in 9th Class Portuguese students.

In graphic 26, the data is taken from the entire sample of students, corresponding to 144 girls and 162 boys. When asked if they had friends in school who liked Palaeontology, more than half the girls (52.1%) and nearly half the boys (49.4%) were unsure. After that, the second most predominant response was affirmative, with 30.6% of girls and 37.7% of boys. The smallest significant percentage is “No”, with 16.7% for girls and 11.1% for boys.

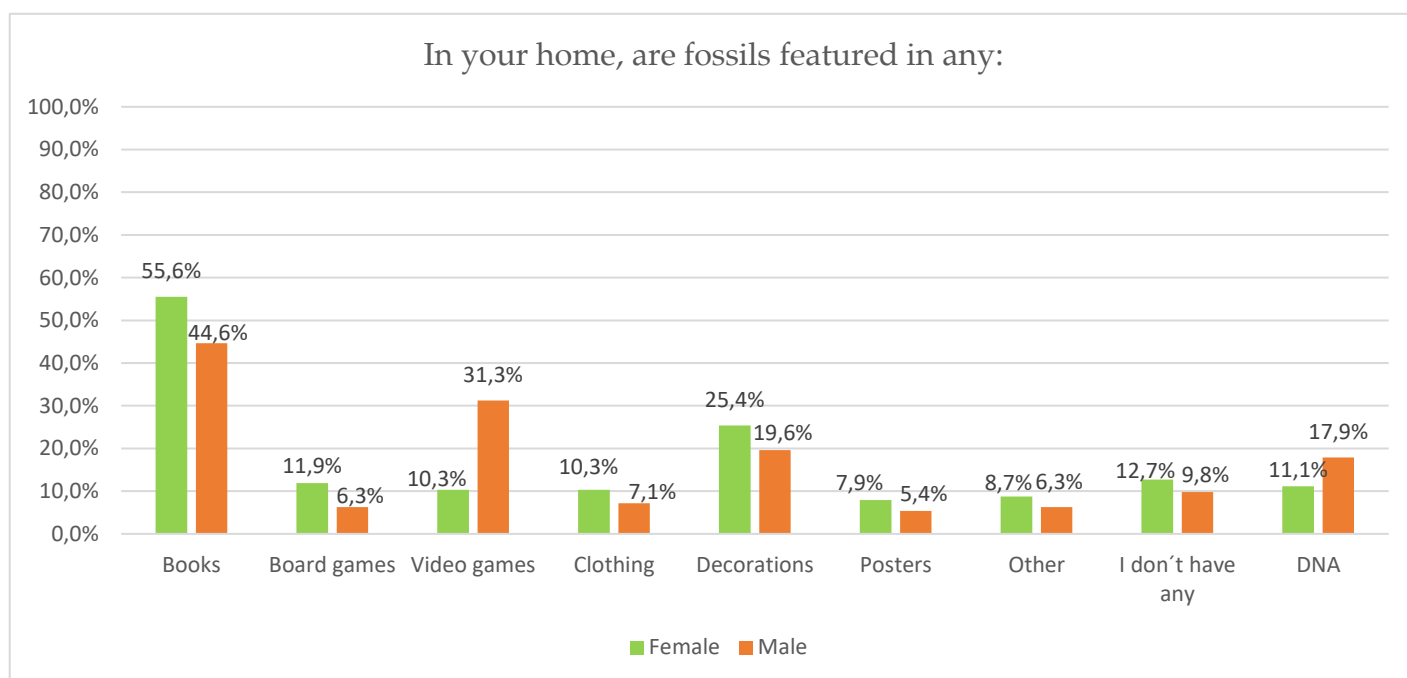


Graphic 27: Representation of the answers to question number nine of the Life Sphere School in 9th Class Portuguese students.

Graphic 27 illustrates responses to question 9 among students who answered affirmatively to question eight. Therefore, the student sample comprises 44 girls and 61 boys. The predominant reaction among students of both genders was negative (68.2% girls and 65.6% boys). The second most common answer was “Yes,” with 20.5% of girls and 24.6% of boys. A smaller percentage, 9.1% of girls and 8.2% of boys, were uncertain.

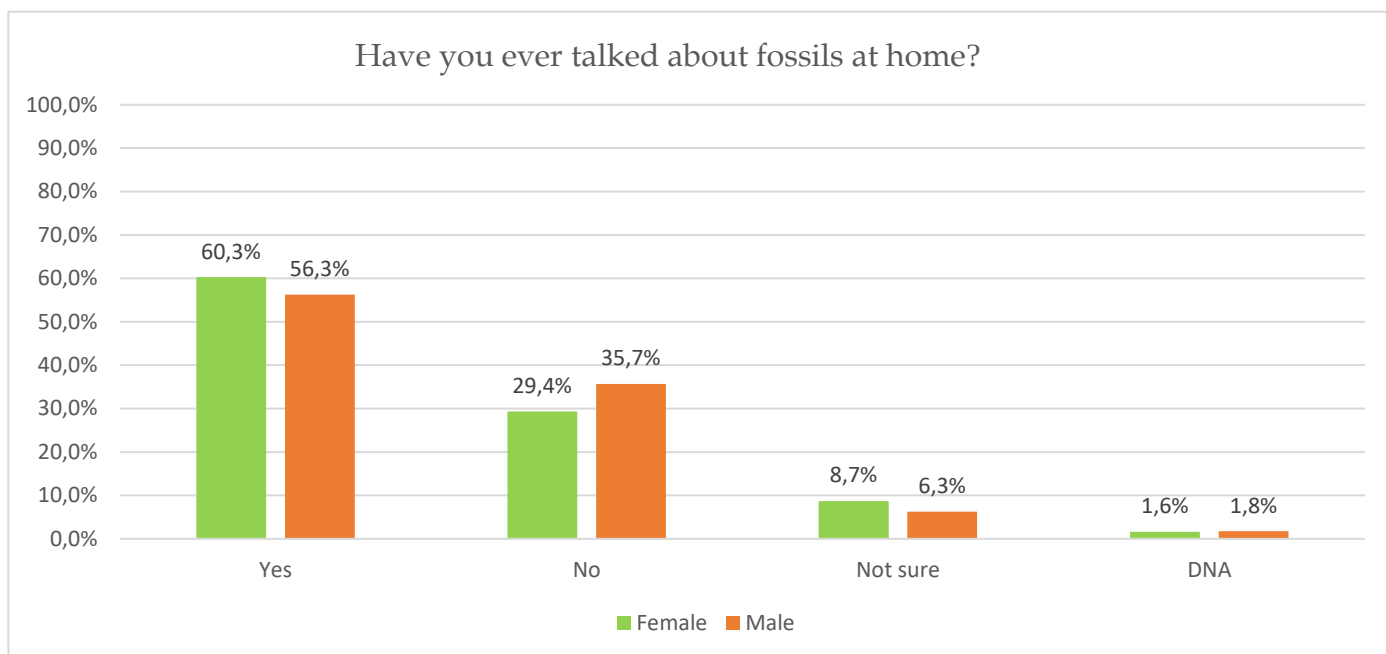
Annexe V - Graphics from survey results: Portugal Life Sphere Home

7th CLASS



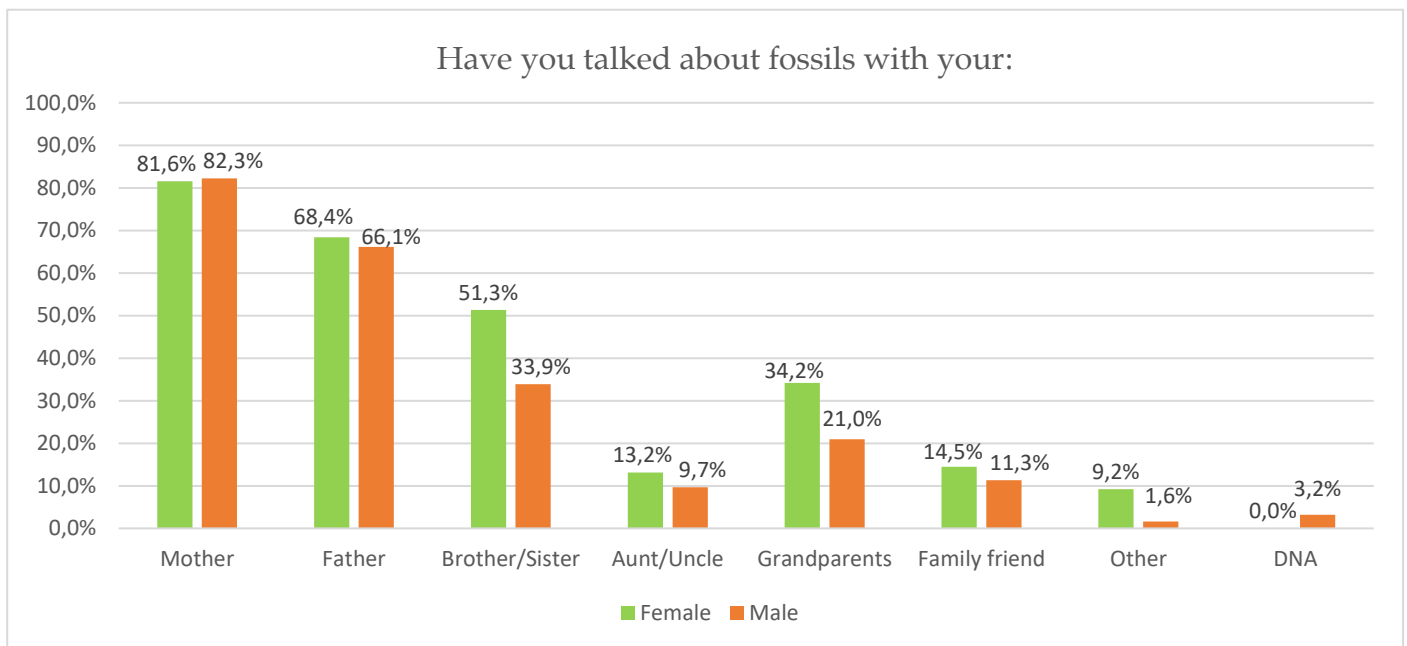
Graphic 28: Representation of the answers to question number one of the Life Sphere Home in 7th Class Portuguese students.

Graphic 28 represents the sample of 7th class female and male students, comprising 126 girls and 112 boys. Books were the top choice for both genders (55.6% of girls and 44.6% of boys) as the most commonly featured objects with fossils in their homes. Following books, video games ranked as the second most common for boys (31.3%), while decorations were the runner-up for girls with 25.4%. Additionally, 12.7% of girls and 9.8% of boys emphasised the absence of fossils displayed in their homes. In the “Other” category, both 6.3% of boys and 8.7% of girls added films, toys, school books, and fossil collections, with boys also adding “floor” and “kitchen counters” and girls “walls”.



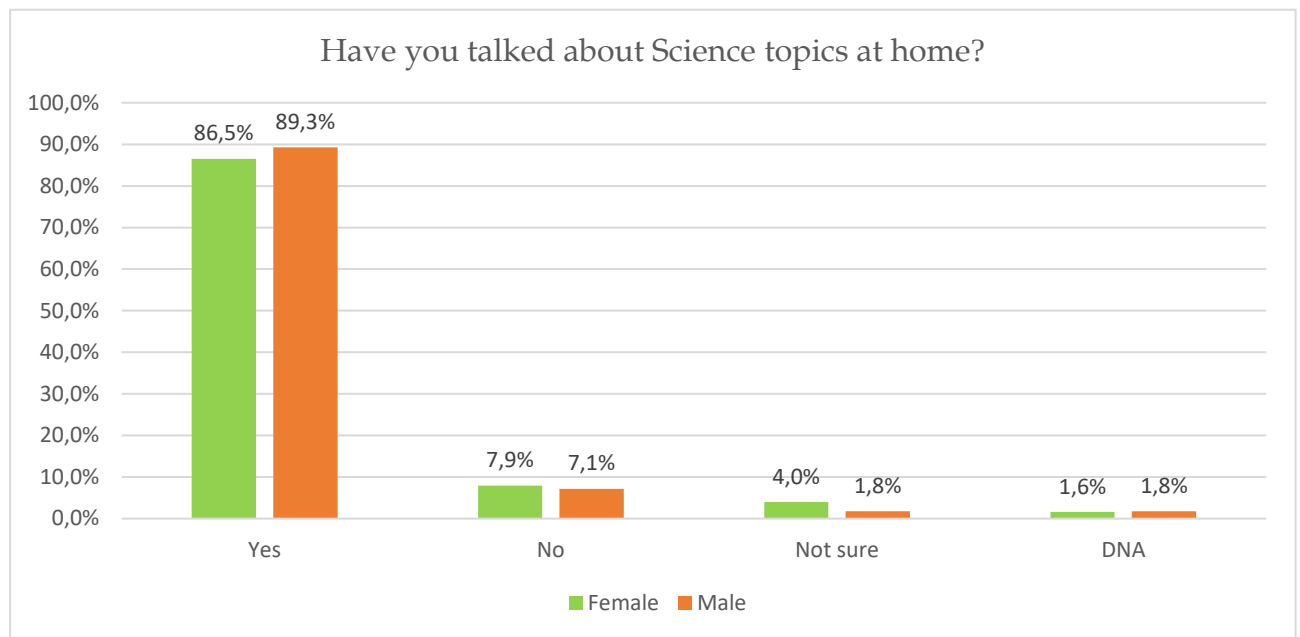
Graphic 29: Representation of the answers to question number two of the Life Sphere Home in 7th Class Portuguese students.

This graphic represents the sample of 7th class female and male students, comprising 126 girls and 112 boys. Notably, the answer with the biggest percentage for both genders is “Yes”. Only 29.4% of girls and 35.7% of boys indicate that they do not discuss fossils at home, while 8.7% of girls and 6.3% of boys express uncertainty on the matter.



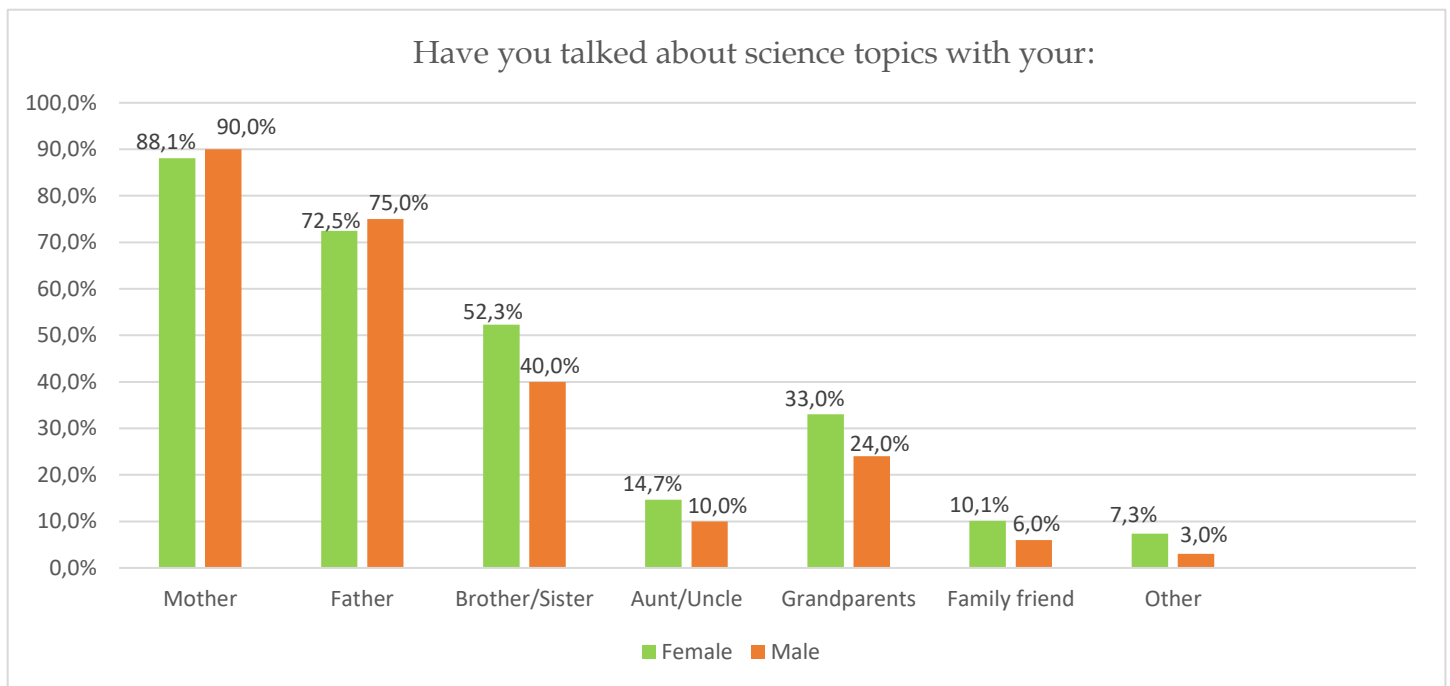
Graphic 30: Representation of the answers to question number three of the Life Sphere Home in 7th Class Portuguese students.

For this visual representation, the sample of students consisted of those who replied affirmatively to question 2 of the Home Life Sphere, totalling 76 girls and 63 boys; however, due to an invalid answer, the total number of boys was 62. Both girls (81.6%) and boys (82.3%) talk primarily with their mother about fossils, followed by their father (girls 68.4% and boys 66.1%) and siblings (51.3% for girls and 33.9% for boys). Grandparents are also members of the family who contribute to discussing this subject, with 34.2% of girls and 21% of boys selecting this answer; after that comes family friends, with 14.5% of girls and 11.3% of boys. Moreover, both boys (1.6%) and girls (9.2%) added the option “Other”, citing cousins, with the female students also adding best friend, stepfather and teacher.



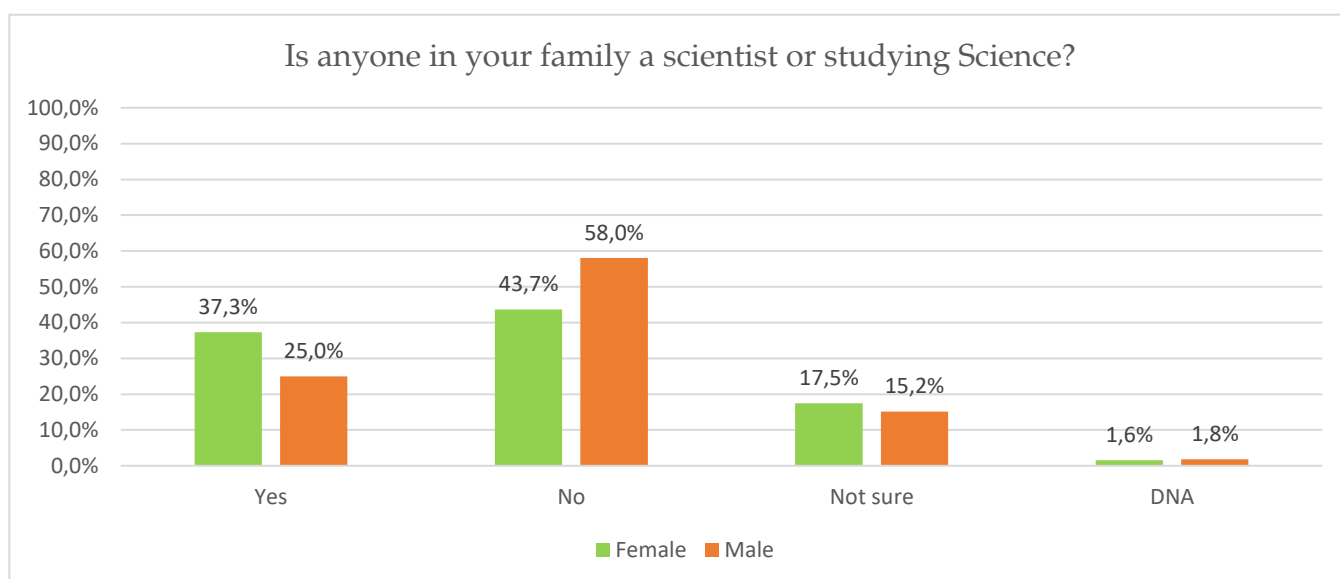
Graphic 31: Representation of the answers to question number four of the Life Sphere Home in 7th Class Portuguese students.

Graphic 31 displays the overall number of students who participated in the surveys: 126 girls and 112 boys. The predominant response among female and male students regarding discussion of scientific topics at home is “Yes,” with 86.5% of girls and 89.3% of boys. A minimal percentage of 7.9% of girls and 7.1% of boys stated that they do not engage in such discussion, while 4% of girls and 1.8% of boys expressed uncertainty.



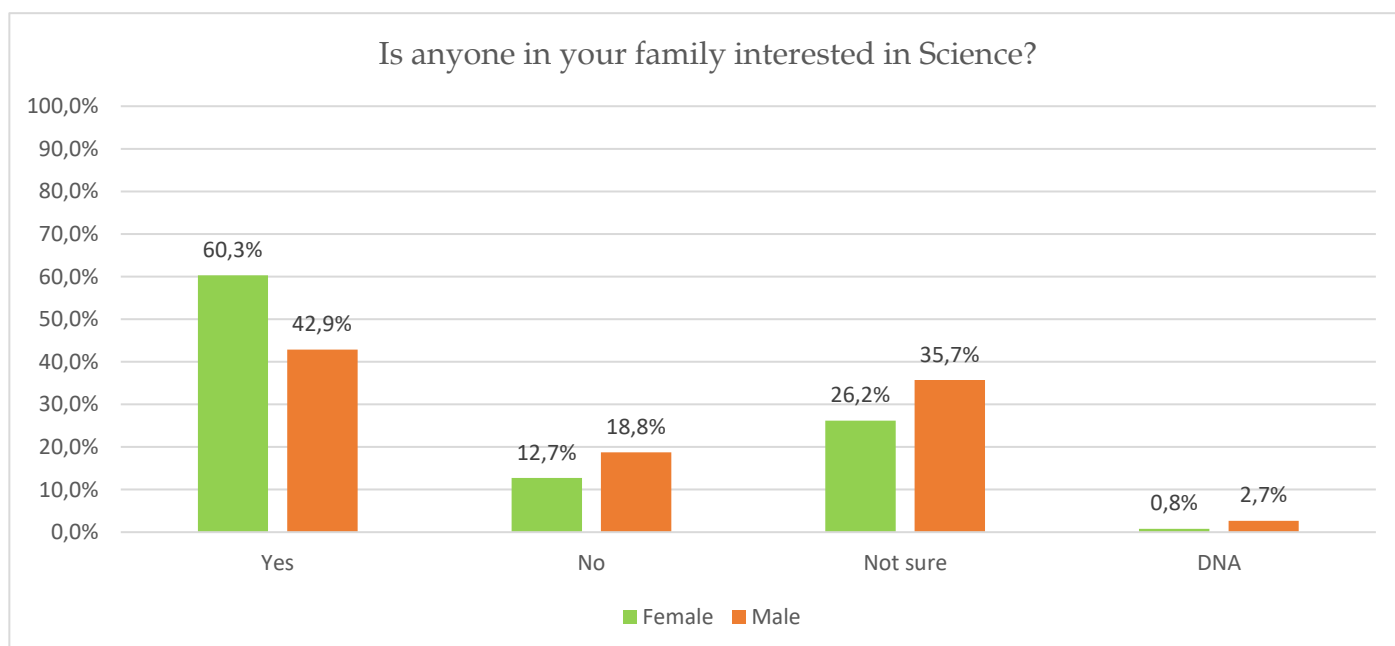
Graphic 32: Representation of the answers to question number five of the Life Sphere Home in 7th Class Portuguese students.

For graphic number 32, the sample of students consisted of those who replied affirmatively to question 4 of the Home Life Sphere, totalling 109 girls and 100 boys. Both girls (88.1%) and boys (90%) talk primarily with their mother about Science, followed by their father (girls 72.5% and boys 75%) and siblings (52.3% for girls and 40% for boys). Grandparents are also members of the family who contribute to discussing this subject, with 33% of girls and 24% of boys selecting this option; after that comes aunt and or uncle, with 14.7% of girls and 10% of boys. Moreover, both genders (boys 3% and girls 7.3%) added the option “Other”, citing cousins, with boys also adding stepmother and girls adding best friend, stepfather and teacher.



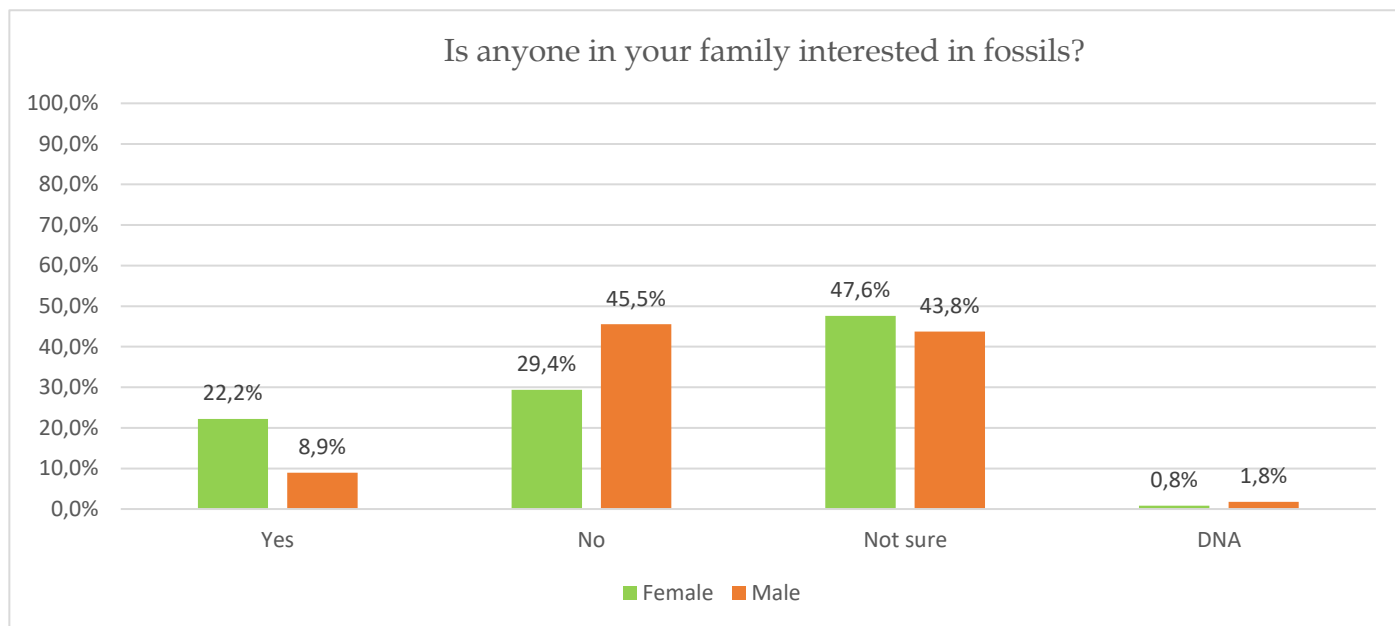
Graphic 33: Representation of the answers to question number six of the Life Sphere Home in 7th Class Portuguese students.

In graphic 33, the entire sample of 126 girls and 112 boys is represented. The most common response to whether the students have a family member studying science or working as a scientist, for both genders was “No” with 43.7% for girls and 58% for boys. This was followed by “Yes”, with 37.3% of girls and 25% of boys. Only 17.5% of girls and 15.2% of boys expressed uncertainty.



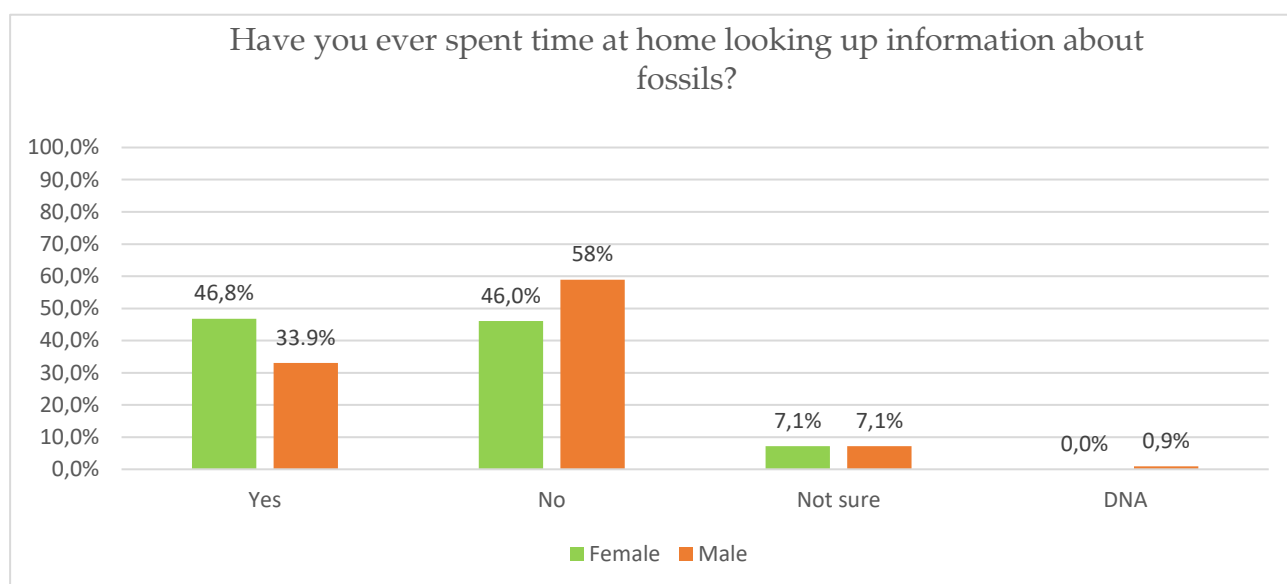
Graphic 34: Representation of the answers to question number seven of the Life Sphere Home in 7th Class Portuguese students.

In graphic 34, the sample of 126 girls and 112 boys is represented. The most common answer when asking if the students have someone in their family interested in science is “Yes, girls (60.3%) and boys (42.9%), followed by 26.2% of female students and 35.7% of male students not knowing, and 12.7% of girls and 18.8% of boys replying “No”.



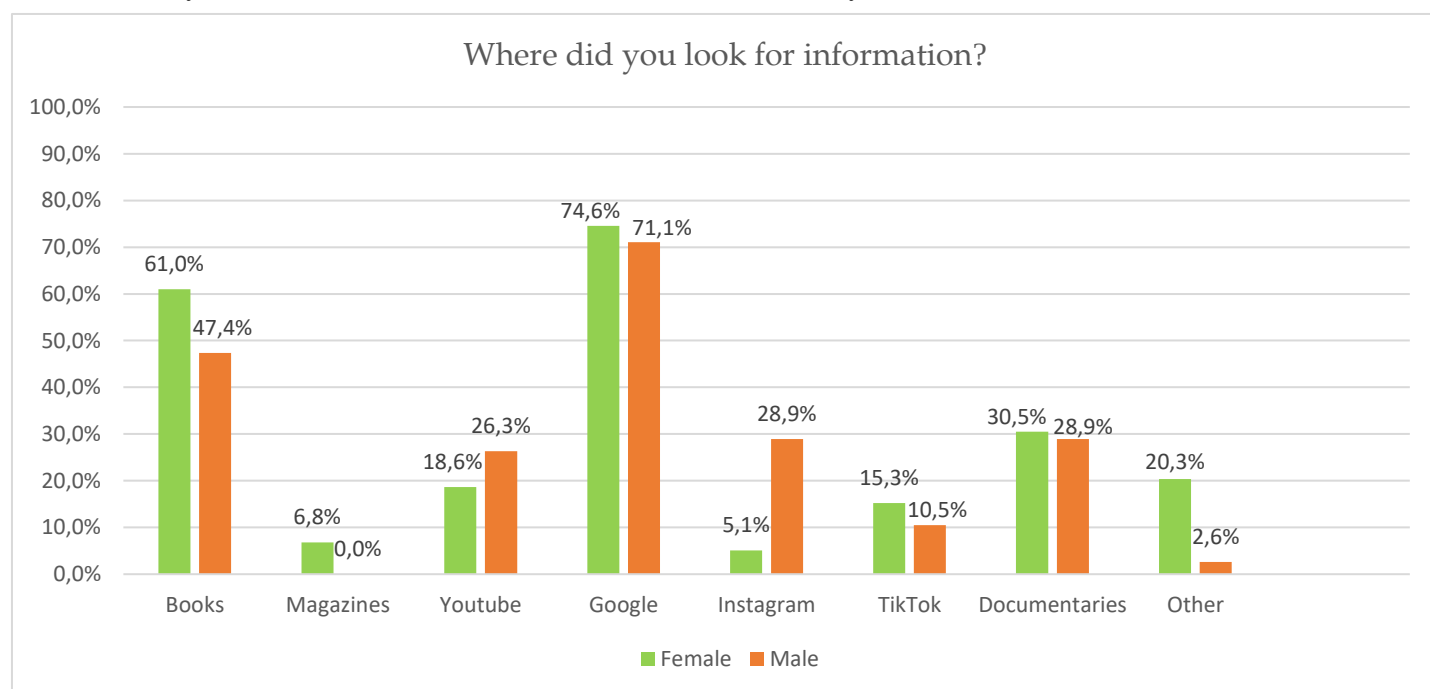
Graphic 35: Representation of the answers to question number eight of the Life Sphere Home in 7th Class Portuguese students.

Graphic 35 represents the total sample of 7^o Class students who completed the surveys: 126 girls and 112 boys. Among girls, the most common response, 47.6%, is “Not sure,” whereas for boys, it is “No” with 45.5%. Only 22.2% of girls and 8.9% of boys reported having someone in the family interested in fossils.



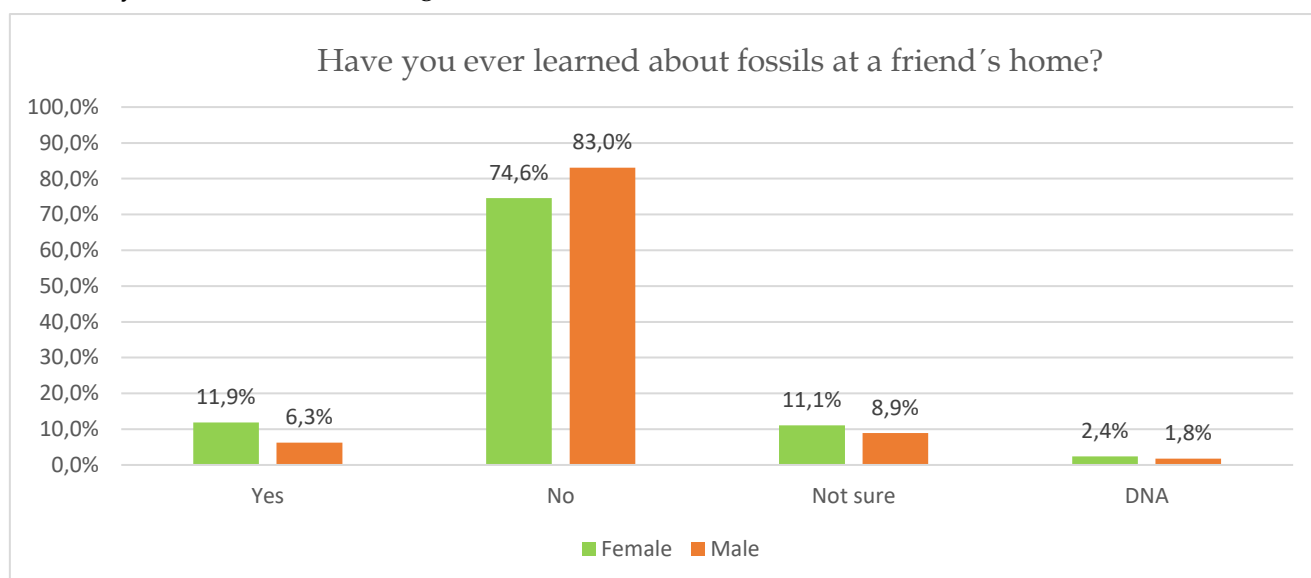
Graphic 36: Representation of the answers to question number nine of the Life Sphere Home in 7th Class Portuguese students.

Graphic 36 represents the total sample of 7th Class students who completed the surveys: 126 girls and 112 boys. More than half the boys (58%) replied that they do not look up information about fossils at home, the same as 46% of girls. Alternatively, 46.8% of girls and 33.9% of boys said they do, while 7.1% of the students showed uncertainty.



Graphic 37: Representation of the answers to question number ten of the Life Sphere Home in 7th Class Portuguese students.

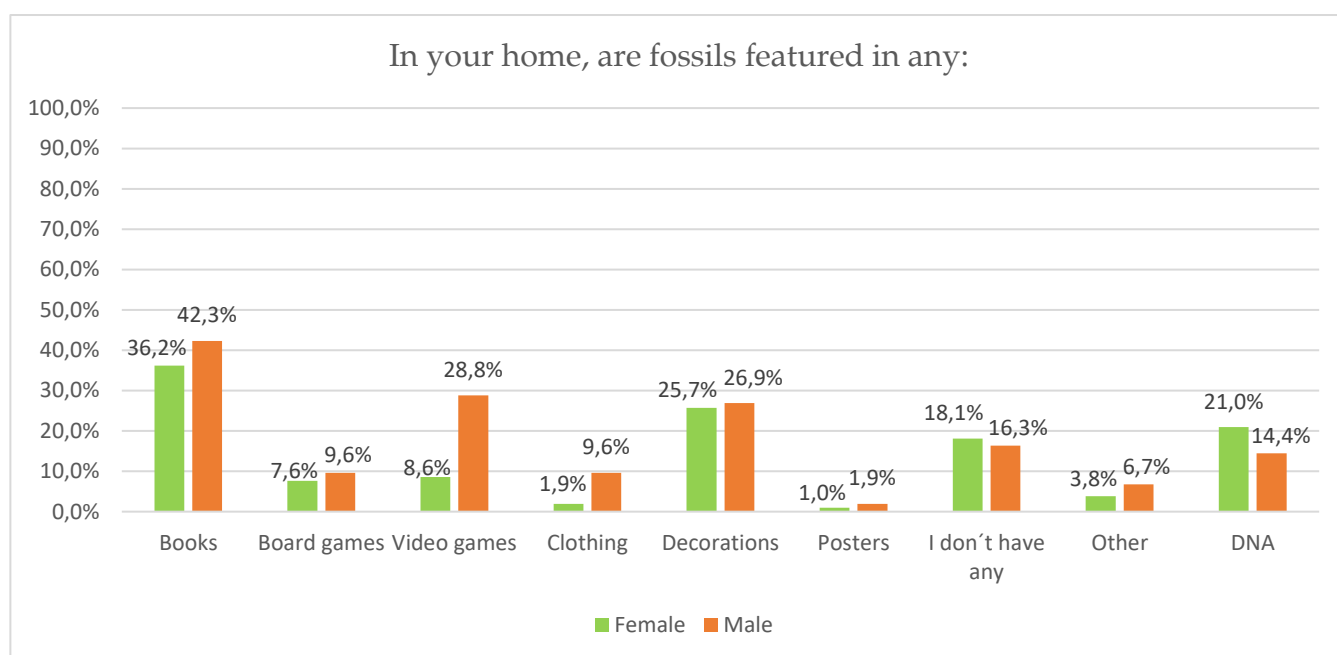
Graphic 37 focuses solely on students who answered affirmatively to question 9, totalling 59 girls and 38 boys. The most commonly cited source for both genders when seeking information about fossils is Google, with 74.6% of girls and 71.1% of boys, followed by books (61% of girls and 47.4% of boys). Documentaries rank as the third most utilised source for girls (30.5%) and boys (28.9%), while Instagram is also popular among boys (28.9%) compared to a smaller percentage of girls (5.1%). YouTube is used by 18.6% of girls and 26.3% of boys. In addition, 20.3% of girls selected “Other”, citing internet sites, school books, and the “Escola virtual” platform, TV series, finding an interest in fossils they already possess at home and ChatGPT. Similarly, 2.6% of boys also mentioned using ChatGPT.



Graphic 38: Representation of the answers to question number eleven of the Life Sphere Home in 7th Class Portuguese students.

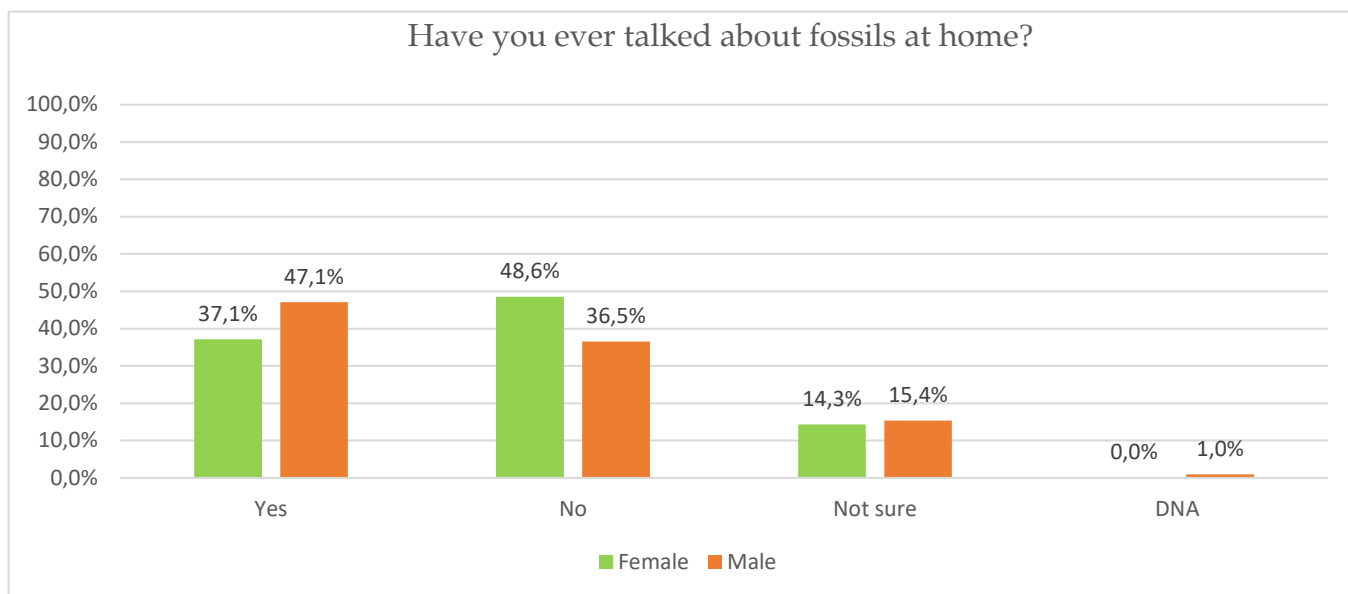
Graphic 38 illustrates the entire sample of 7th Class students who completed the surveys: 126 girls and 112 boys. Most boys (83%) and girls (74.6%) replied that they never learned about fossils in a friend's home. Only 11.9% of girls and 6.3% of boys reported learning about the subject in a friend's place, while 11.1% of girls and 8.9% of boys expressed uncertainty.

8th CLASS



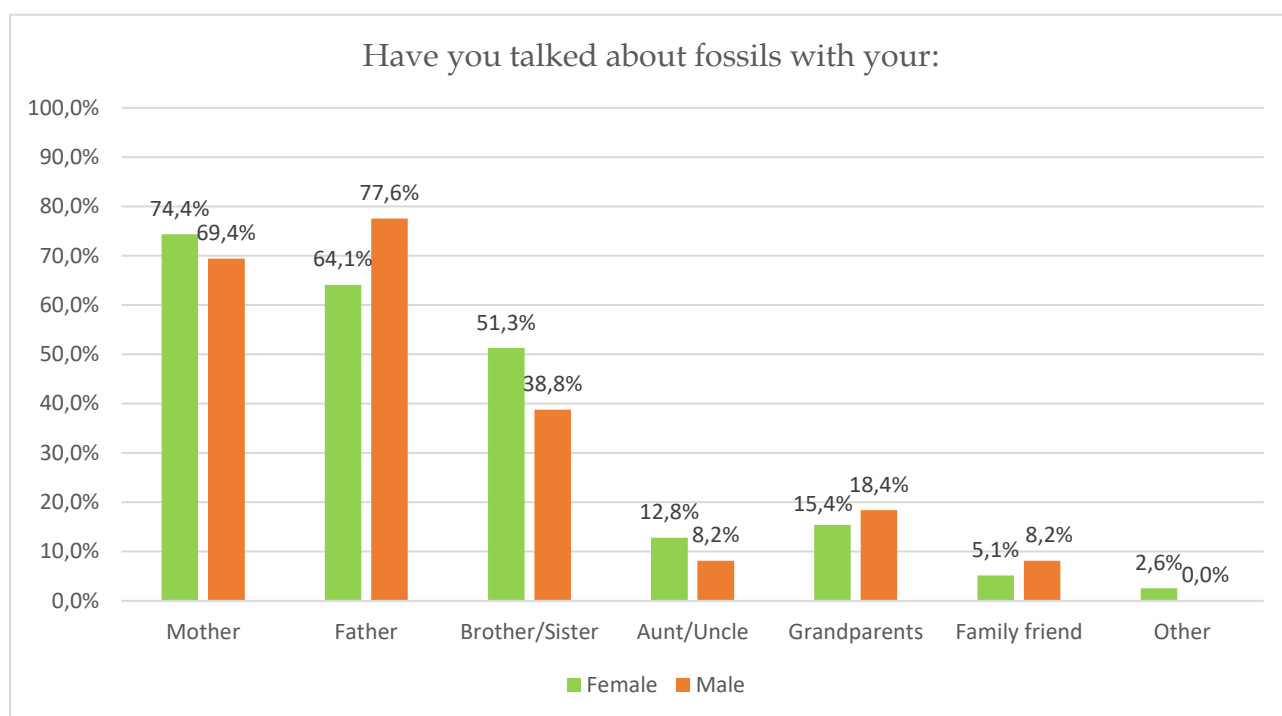
Graphic 39: Representation of the answers to question number one of the Life Sphere Home in 8th Class Portuguese students.

Graphic 39 represents the sample of 8th class female and male students, comprising 105 girls and 104 boys. Books were the top choice for both genders (36.2.% of girls and 42.3% of boys) as the most commonly featured objects with fossils in their homes. Following books, video games ranked as the second most common for boys (28.8%), while decorations were the most selected for girls with 25.7%, followed by boys with 26.9%. Additionally, 18.1% of girls and 16.3% of boys emphasised the absence of fossils displayed in their homes. In the “Other” category, both 3.8% of girls and 6.7% of boys added school books, toys and fossil collections, with boys also adding “floor” and girls “walls”.



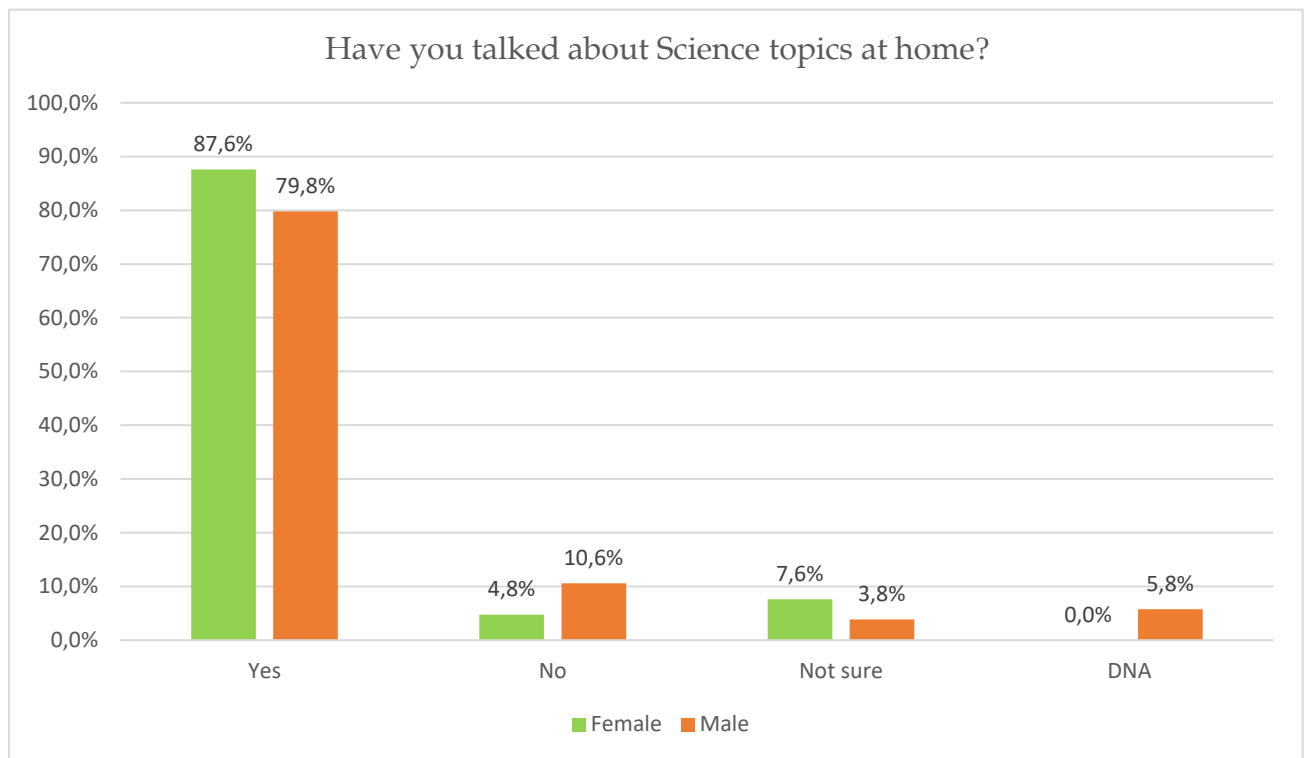
Graphic 40: Representation of the answers to question number two of the Life Sphere Home in 8th Class Portuguese students.

This graphic represents the sample of 8th class female and male students, comprising 105 girls and 104 boys. For girls, the most common answer when asked if they discuss the topic of fossils at home is “No,” with 48.6%, compared with the boys at 36.5%. Notably, for boys, the majority goes to “Yes,” with 47.1%, whereas for girls, it is 37.1%. A small percentage of students, 14.3% of female and 15.4% of male students, express uncertainty.



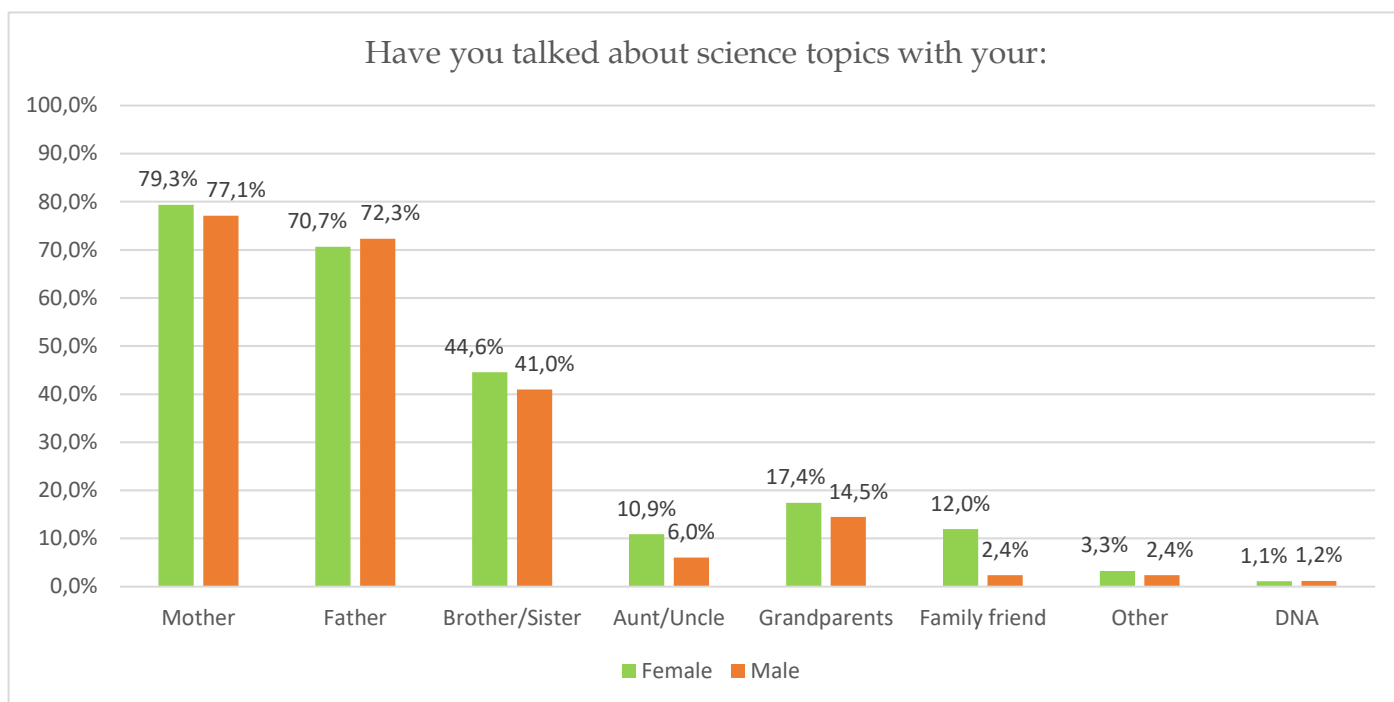
Graphic 41: Representation of the answers to question number three of the Life Sphere Home in 8th Class Portuguese students.

For this visual representation, the sample of students consisted of those who replied affirmatively to question 2 of the Home Life Sphere, totalling 39 girls and 49 boys. The majority of girls (74.4%) talk primarily with their mother about fossils, while for boys (77.6%) is the father, followed by siblings (girls 51.3% and boys 38.8%). Grandparents are also members of the family who contribute to discussing this subject, with 15.4% of girls and 18.4% of boys selecting this answer; after that comes aunt/uncle, with 12.8% of girls and 8.2% of boys. Moreover, 2.6% of girls added the option "Other", citing stepmother.



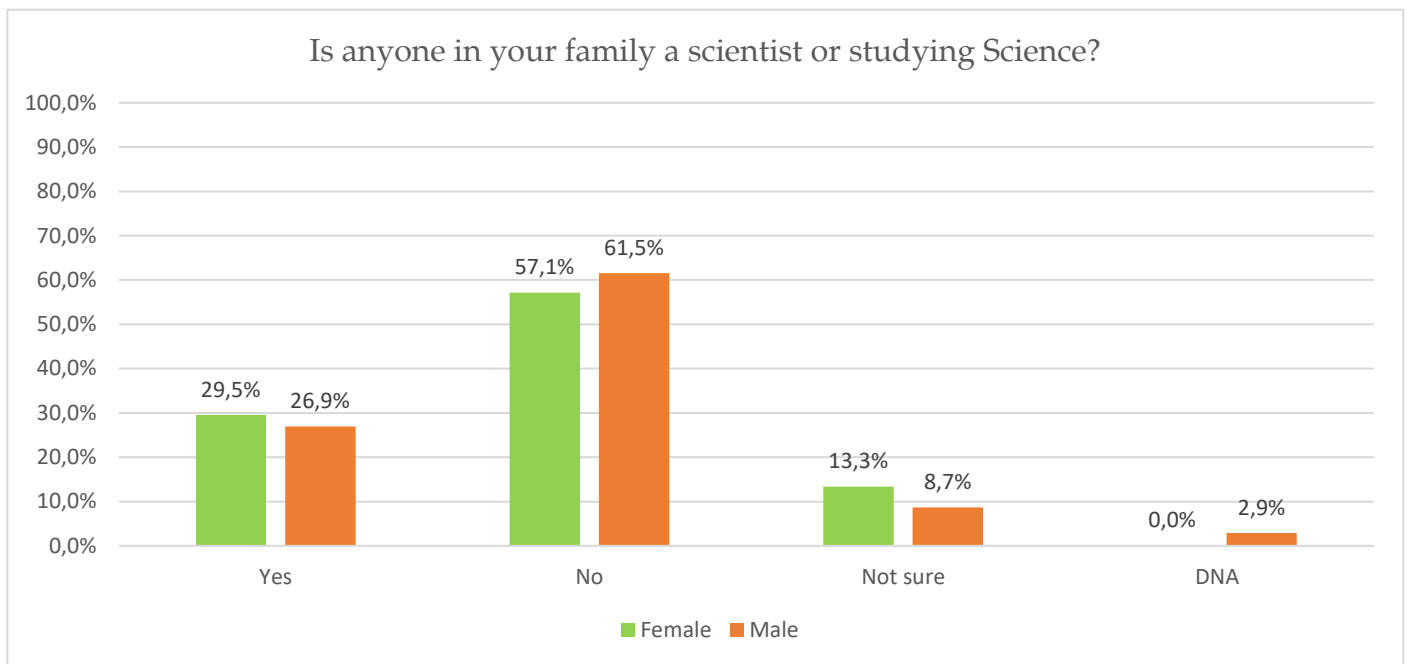
Graphic 42: Representation of the answers to question number four of the Life Sphere Home in 8th Class Portuguese students.

Graphic 42 displays the overall number of students who participated in the surveys: 105 girls and 104 boys. The predominant response among both female and male students regarding discussion of scientific topics at home is “Yes,” with 87.6% of girls and 79.8% of boys. A percentage of 4.8% of girls and 10.6% of boys stated that they do not engage in such discussion, while 7.6% of girls and 3.8% of boys expressed uncertainty.



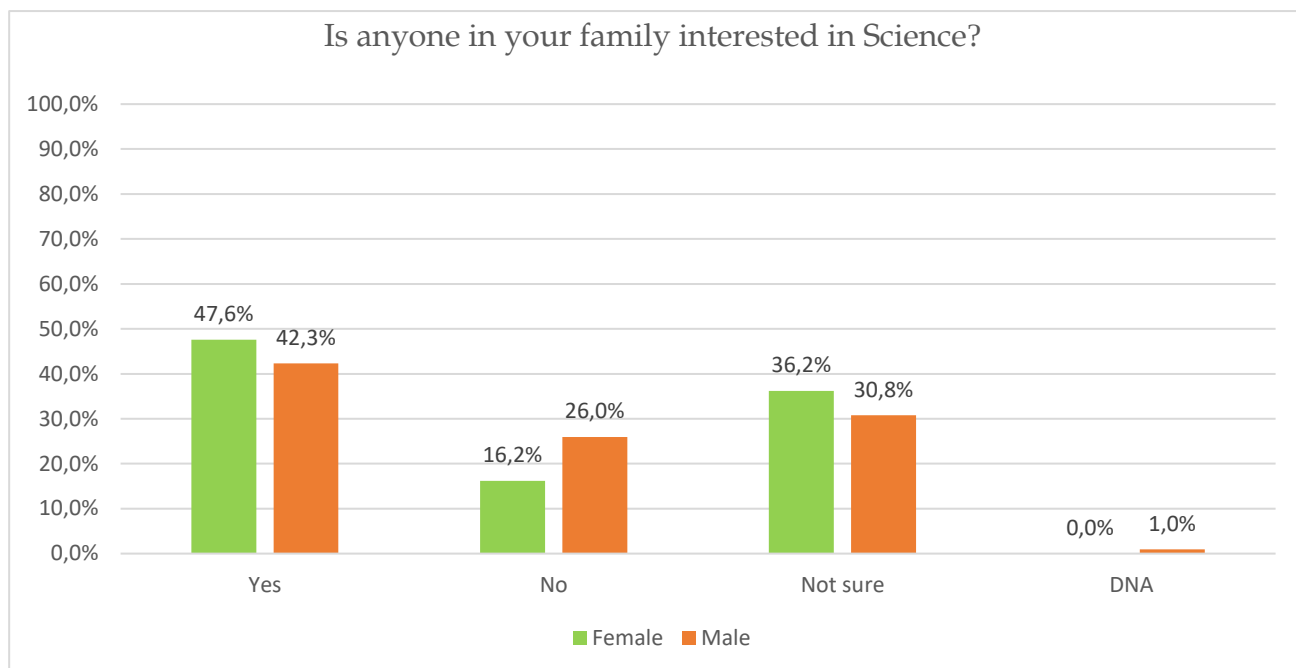
Graphic 43: Representation of the answers to question number five of the Life Sphere Home in 8th Class Portuguese students.

For graphic number 43, the sample of students consisted of those who replied affirmatively to question 4 of the Home Life Sphere, totalling 92 girls and 83 boys. Both girls (79.3%) and boys (77.1%) talk primarily with their mother about Science, followed by their father (girls 70.7% and boys 72.3%); after that, the most common answer is siblings (44.6% for girls and 41% for boys). Grandparents are also members of the family who contribute to discussing scientific topics, with 17.4% of girls and 14.5% of boys selecting this answer. Family friends represent 12% of female students' interactions, while for boys, it is more common (6%) to be an aunt or uncle. Furthermore, both genders (girls 3.3% and boys 2.4%) added the option "Other", citing cousins as the most common answer, with boys also adding great-uncle and girls adding step-mother.



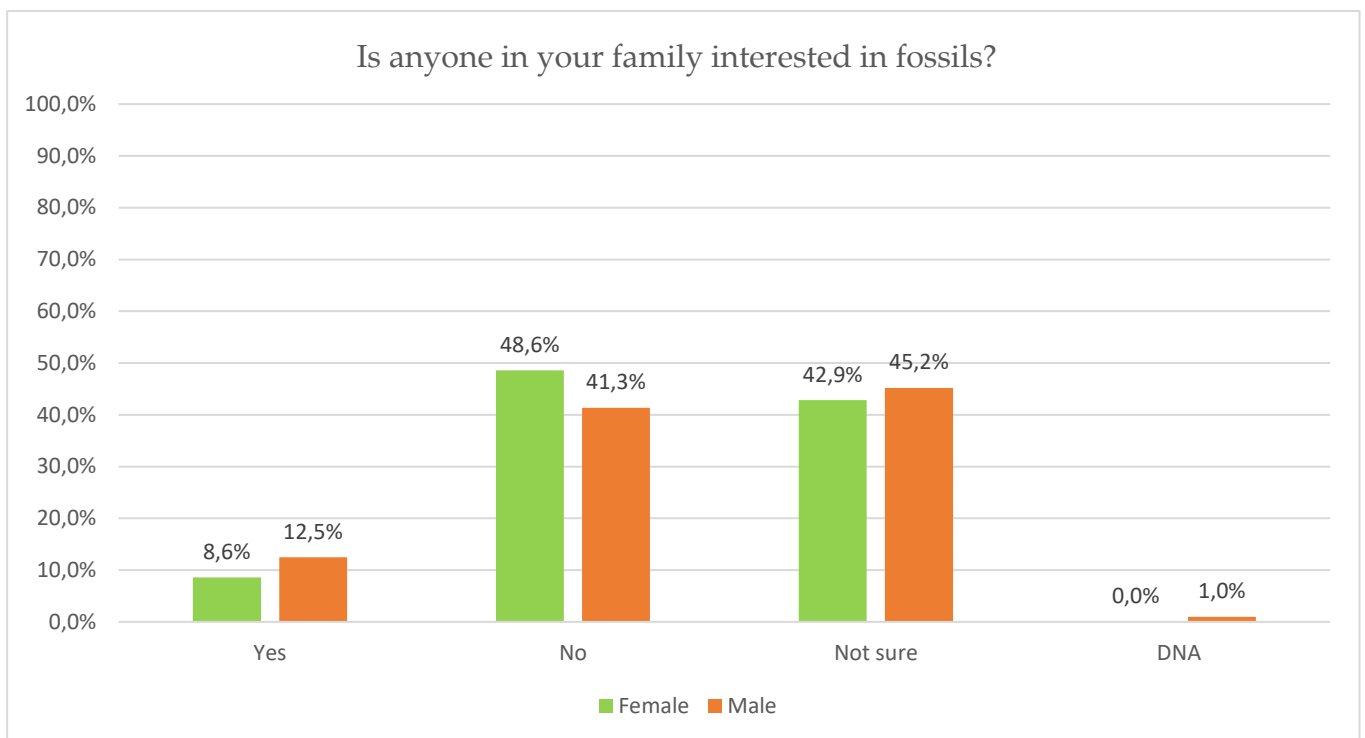
Graphic 44: Representation of the answers to question number six of the Life Sphere Home in 8th Class Portuguese students.

In graphic 44, the entire sample of 105 girls and 104 boys is represented. The majority of responses to whether the students have a family member studying science or working as a scientist for both genders were “No,” with 57.1% for girls and 61.5% for boys. This was followed by “Yes,” with 29.5% of girls and 26.9% of boys. Only 13.3% of girls and 8.7% of boys expressed uncertainty.



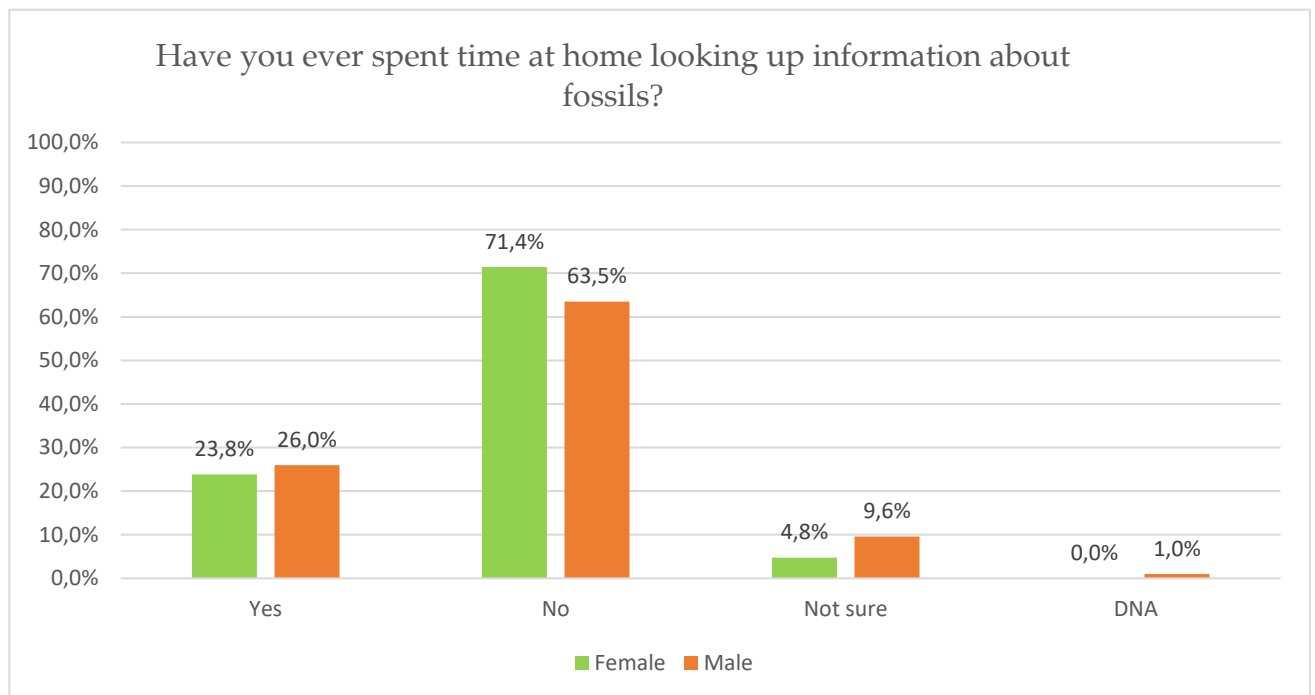
Graphic 45: Representation of the answers to question number seven of the Life Sphere Home in 8th Class Portuguese students.

In graphic 45, the sample of 105 girls and 104 boys is represented. The most common answer when asked if the students have someone in their family interested in science is “Yes,” girls (47.6%) and boys (42.3%), followed by 36.2% of female and 30.8% of male students unsure and 16.2% of girls and 26% of boys replying negatively.



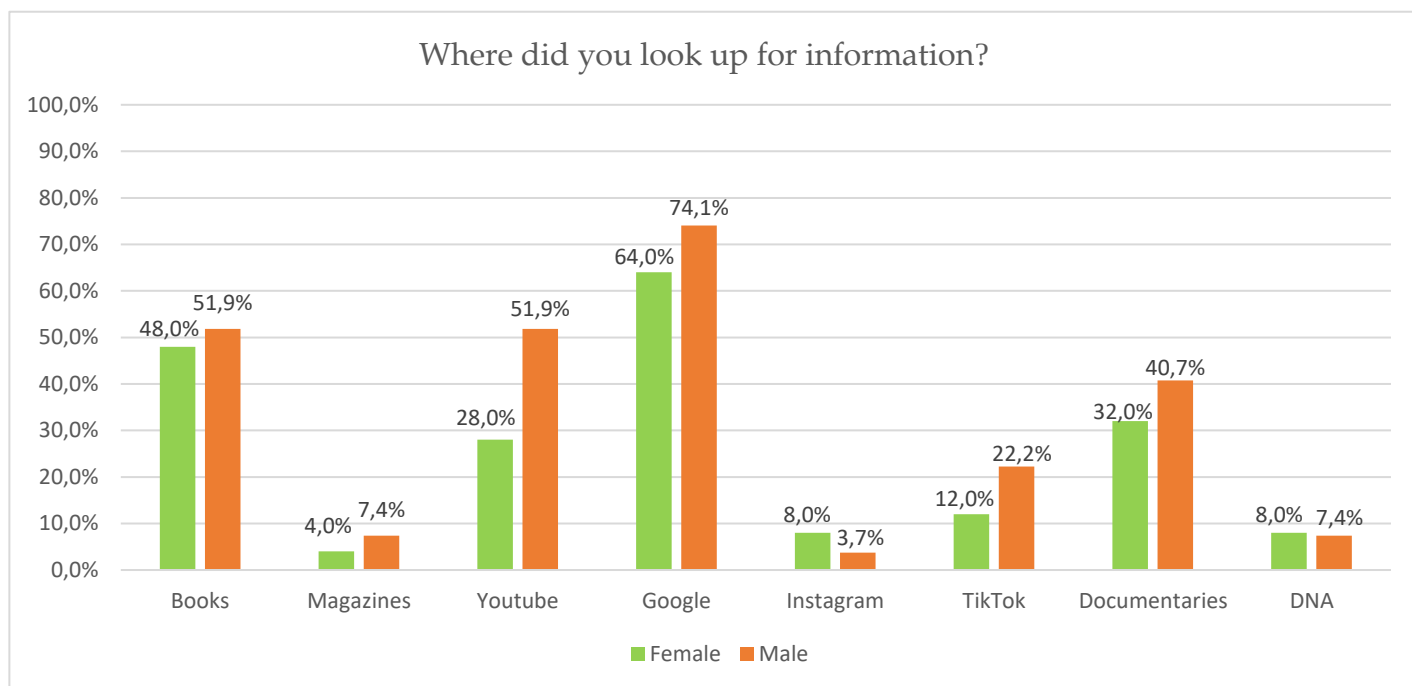
Graphic 46: Representation of the answers to question number eight of the Life Sphere Home in 8th Class Portuguese students.

Graphic 46 represents the total sample of 8th Class students who completed the surveys: 105 girls and 104 boys. For girls, the most common answer, 48.6%, is “No,” while for boys, it is “Not sure” with 45.2%. Only 8.6% of girls and 12.5% of boys say they have someone in the family interested in fossils.



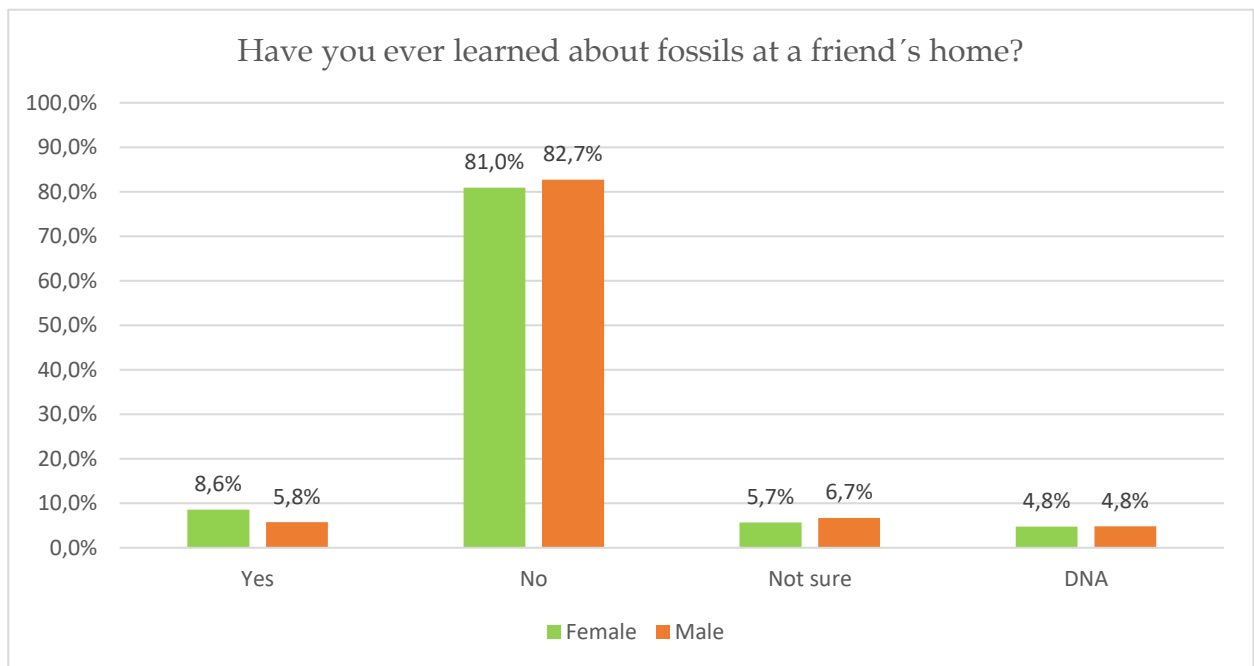
Graphic 47: Representation of the answers to question number nine of the Life Sphere Home in 8th Class Portuguese students.

Graphic 47 illustrates the entire sample of 8^o Class students who completed the surveys: 105 girls and 104 boys. The predominant response for both genders (71.4% of girls and 63.5% of boys) indicates that they do not seek information about fossils at home. However, 23.8% of girls and 26% of boys stated they do, while 4.8% of girls and 9.6% of boys express uncertainty.



Graphic 48: Representation of the answers to question number ten of the Life Sphere Home in 8th Class Portuguese students.

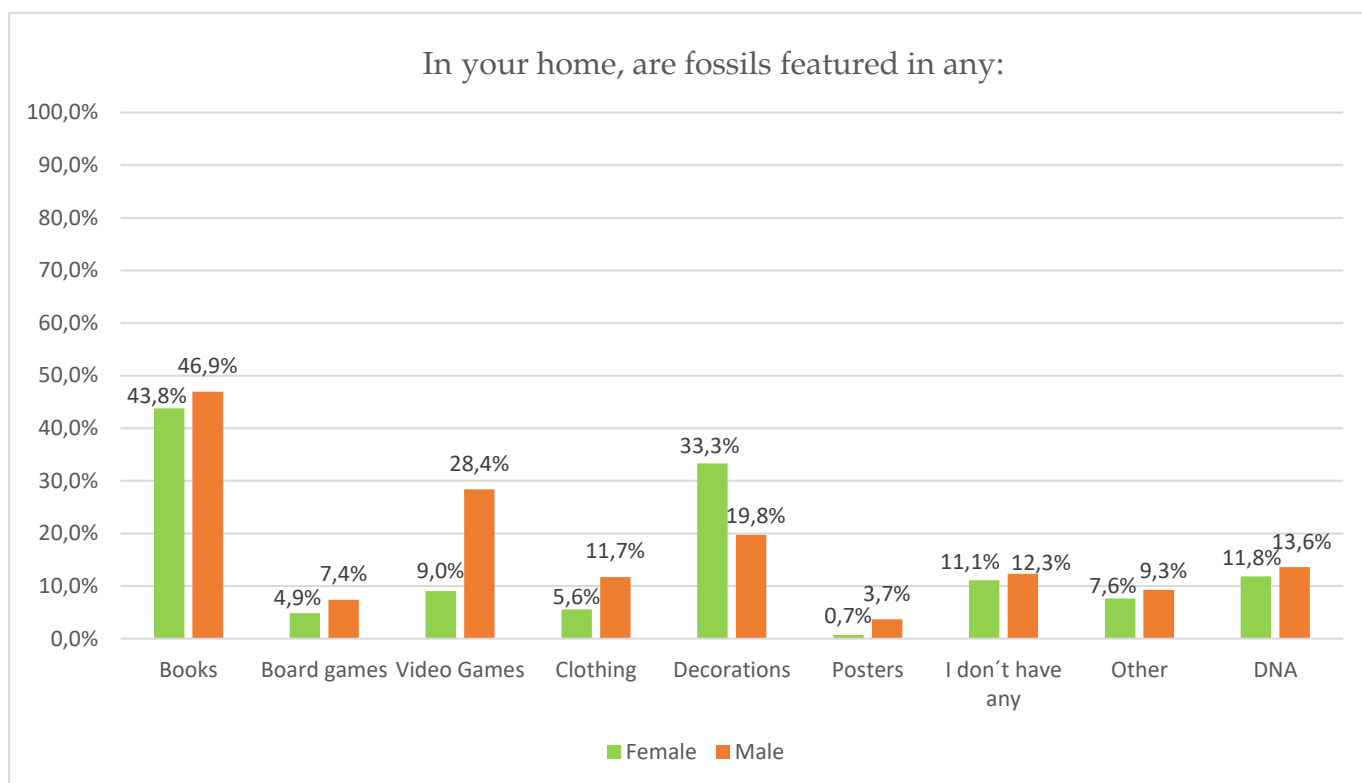
Graphic 48 focuses solely on students who answered affirmatively to question 9, totalling 25 girls and 27 boys. The most commonly cited source for both genders when seeking information about fossils is Google, with 64% of girls and 74.1% of boys, followed by books (48% of girls and 51.9% of boys). YouTube also has the majority of boys, with 51.9% as one of the sources used to look up information. For girls, documentaries rank as the third most utilised source (32%), while for boys, it is fourth at 40.7%. TikTok seems to be also popular among 12% of girls and 22.2% of boys. For boys, Instagram ranks the lowest (3.7%), while for girls is magazines (4%).



Graphic 49: Representation of the answers to question number eleven of the Life Sphere Home in 8th Class Portuguese students.

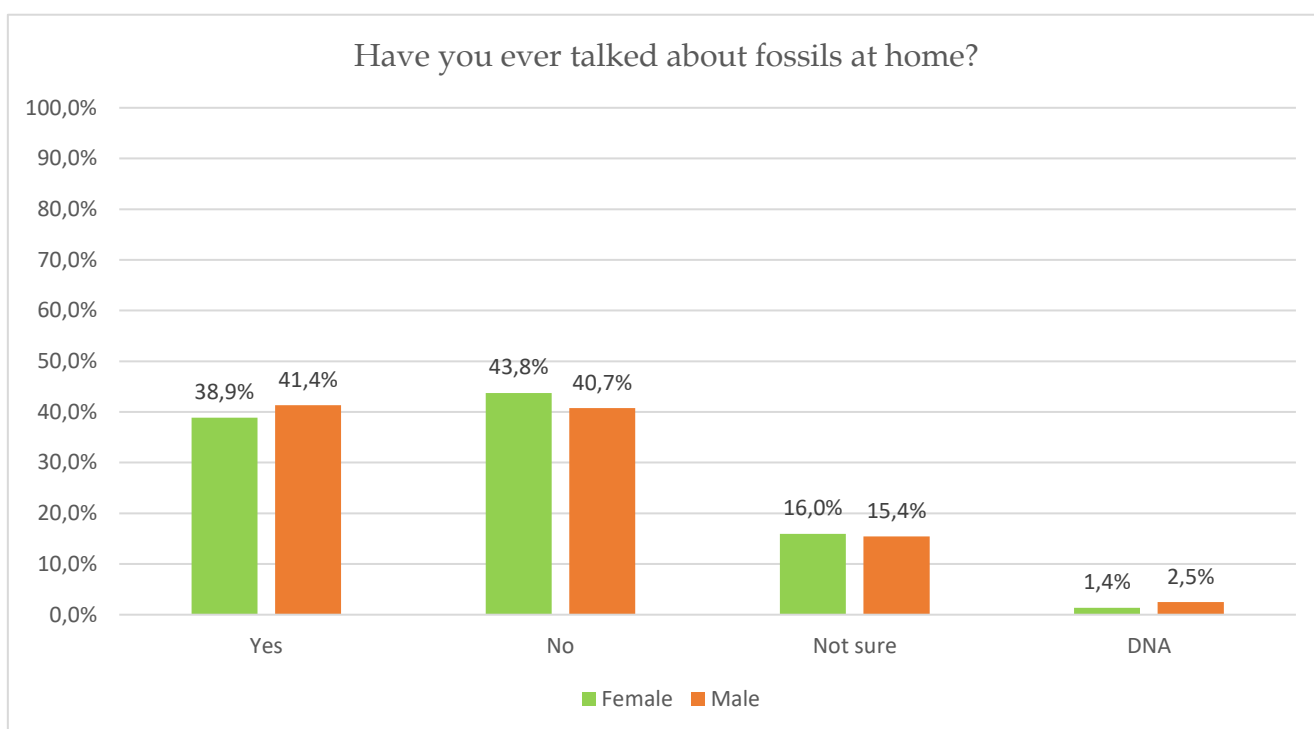
Graphic 49 illustrates the complete sample of 8th Class students who completed the surveys: 105 girls and 104 boys. The majority of both genders (81% of girls and 82.7% of boys) replied that they never learned about fossils in a friend's home. Only 8.6% of girls and 5.8% of boys reported having learned about the subject in a friend's house, while 5.7% of girls and 6.7% of boys expressed uncertainty.

9th CLASS



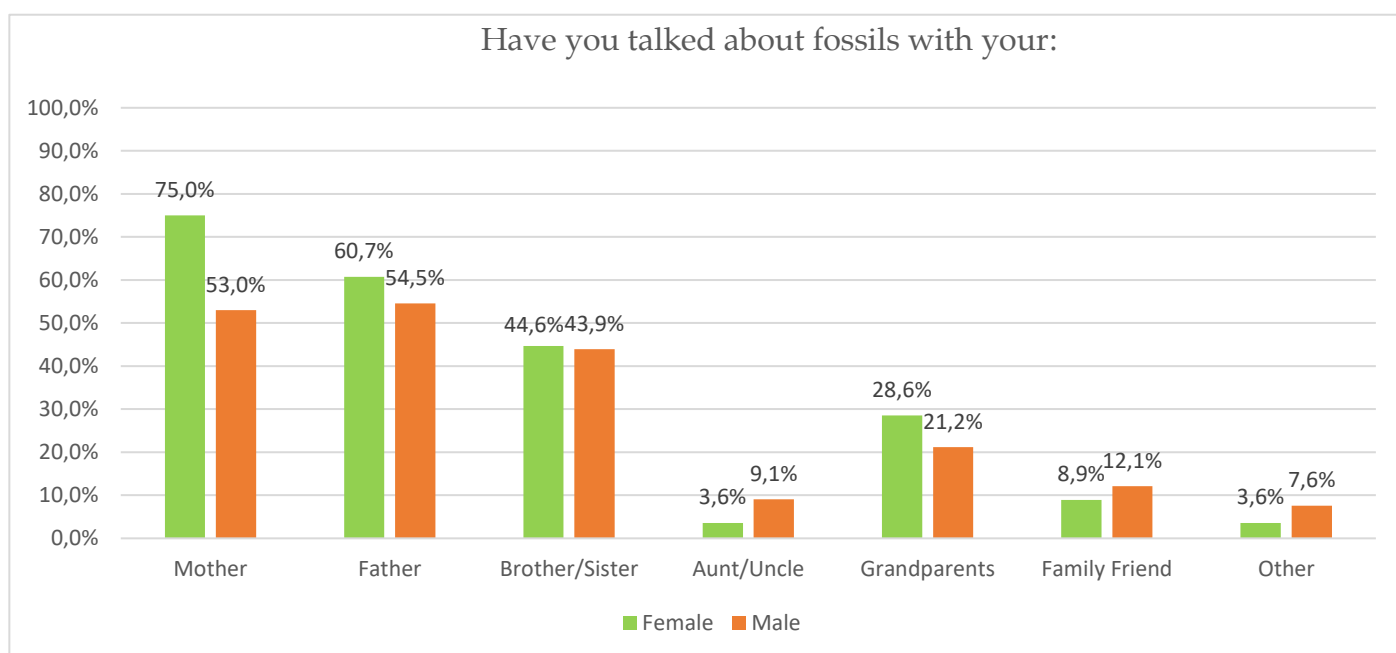
Graphic 50: Representation of the answers to question number one of the Life Sphere Home in 9th Class Portuguese students.

Graphic 50 represents the sample of 9th class female and male students, comprising 144 girls and 162 boys. Books were the top choice for both genders (43.8% of girls and 46.9% of boys) as the most commonly featured objects with fossils in their homes. Following books, video games ranked as the second most common for boys (28.4%), while decorations were the most selected for girls with 33.3%, followed by boys with 19.8%. Additionally, 11.1% of girls and 12.3% of boys emphasised the absence of fossils displayed in their homes. In the “Other” category, 7.6% of girls and 9.3% of boys added school books, toys and “wall”, with boys also adding “floor”, movies, drawings of fossils, fossil sites near home and girls adding jewellery.



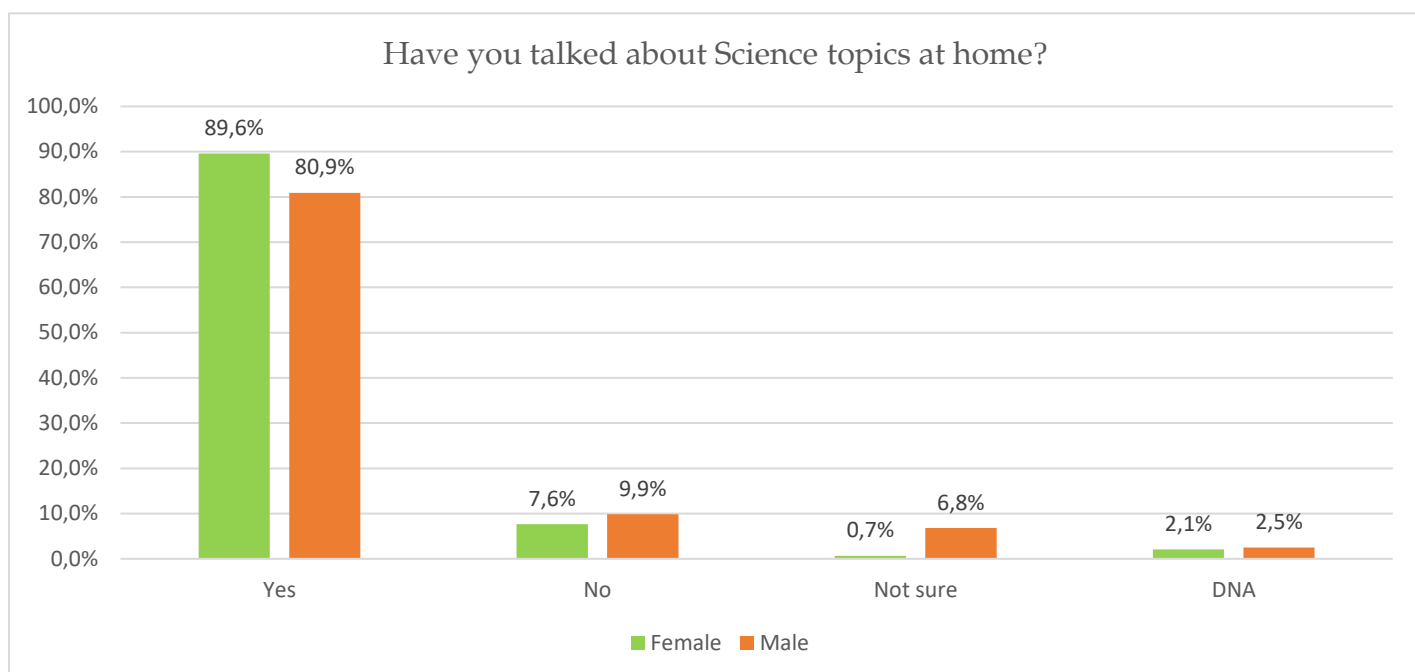
Graphic 51: Representation of the answers to question number two of the Life Sphere Home in 9th Class Portuguese students.

This graphic represents the sample of 9th class female and male students, comprising 144 girls and 162 boys. Among girls, the predominant response when asked if they discuss the topic of fossils at home is “No,” accounting for 43.8%, slightly higher than boys at 40.7%. Notably, for boys, the majority goes to “Yes,” at 41.4%, whereas for girls, it is 38.9%. A small percentage of students, 16% female and 15.4% of male students, express uncertainty.



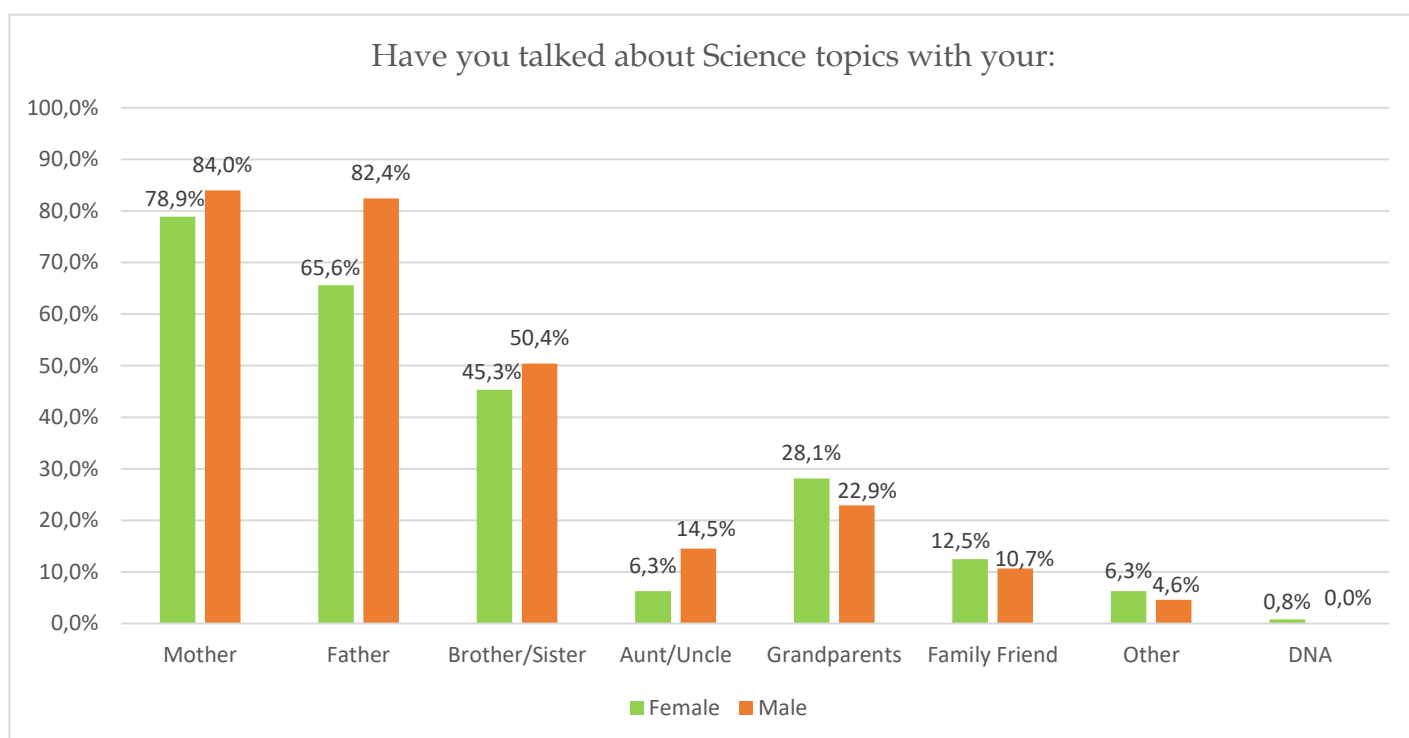
Graphic 52: Representation of the answers to question number three of the Life Sphere Home in 9th Class Portuguese students.

For graphic number 52, the sample of students consisted of those who replied affirmatively to question 2 of the Home Life Sphere, totalling 56 girls and 67 boys; however, due to an invalid answer, only 66 boys will be accounted for. The majority of girls (75%) talk primarily with their mother about fossils, while for boys (54.5%) is the father, followed by siblings (girls 44.6% and boys 43.9%). Grandparents are also members of the family who contribute to discussing this subject, with 28.6% of girls and 21.2% of boys selecting this answer; after that, family friends are the most common answer, with 8.9% of girls and 12.1% of boys. Moreover, 3.6% of girls and 7.6% of boys selected the option "Other", with both citing cousins. Girls also mentioned youth house while boys mentioned friends, nephews and some of the male students could not remember.



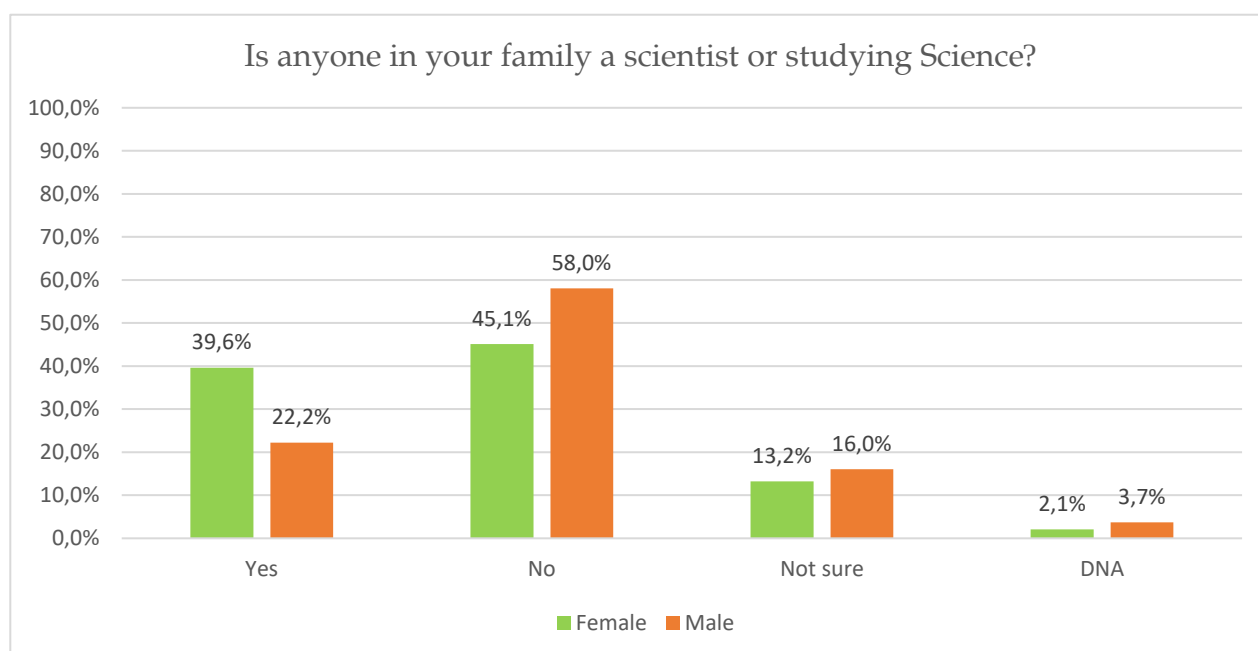
Graphic 53: Representation of the answers to question number four of the Life Sphere Home in 9th Class Portuguese students.

Graphic 53 displays the total number of students who participated in the surveys: 144 girls and 162 boys. The predominant response among both female and male students regarding discussion of scientific topics at home is “Yes,” with 89.6% of girls and 80.9% of boys. A percentage of 7.6% of girls and 9.9% of boys stated that they do not engage in such discussion, while 0.7% of girls and 6.8% of boys expressed uncertainty.



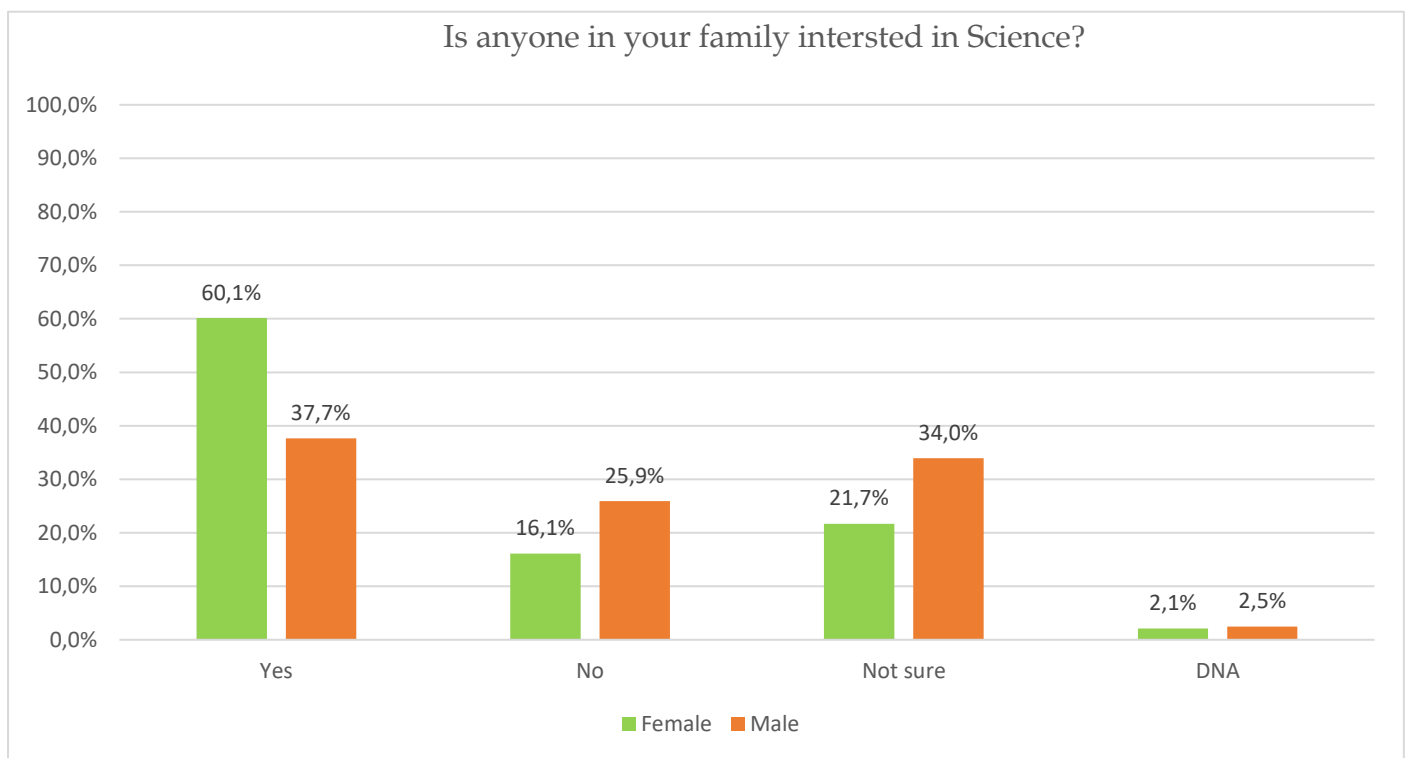
Graphic 54: Representation of the answers to question number five of the Life Sphere Home in 9th Class Portuguese students.

For graphic number 54, the sample of students consisted of those who replied affirmatively to question 4 of the Home Life Sphere, totalling 129 girls and 131 boys; however, due to an invalid answer, only 128 girls were accounted for. Both genders (girls 78.9% and boys 84%) talk primarily with their mother about science, followed by their father (girls 65.6% and boys 82.4%); after that, the most common answer is siblings (45.3% for girls and 50.4% for boys). Grandparents are also members of the family who contribute to discussing scientific topics, with 28.1% of girls and 22.9% of boys selecting this answer. Family friends represent 12.5% of female students' interactions, while for boys, being an aunt or uncle is more common (14.5%). Furthermore, both genders (girls 6.3% and boys 4.6%) added the option "Other", both genders citing cousins. In addition, girls added stepmother, stepfather, friends in youth house, while boys mentioned nephew, adoptive father and that they can not remember.



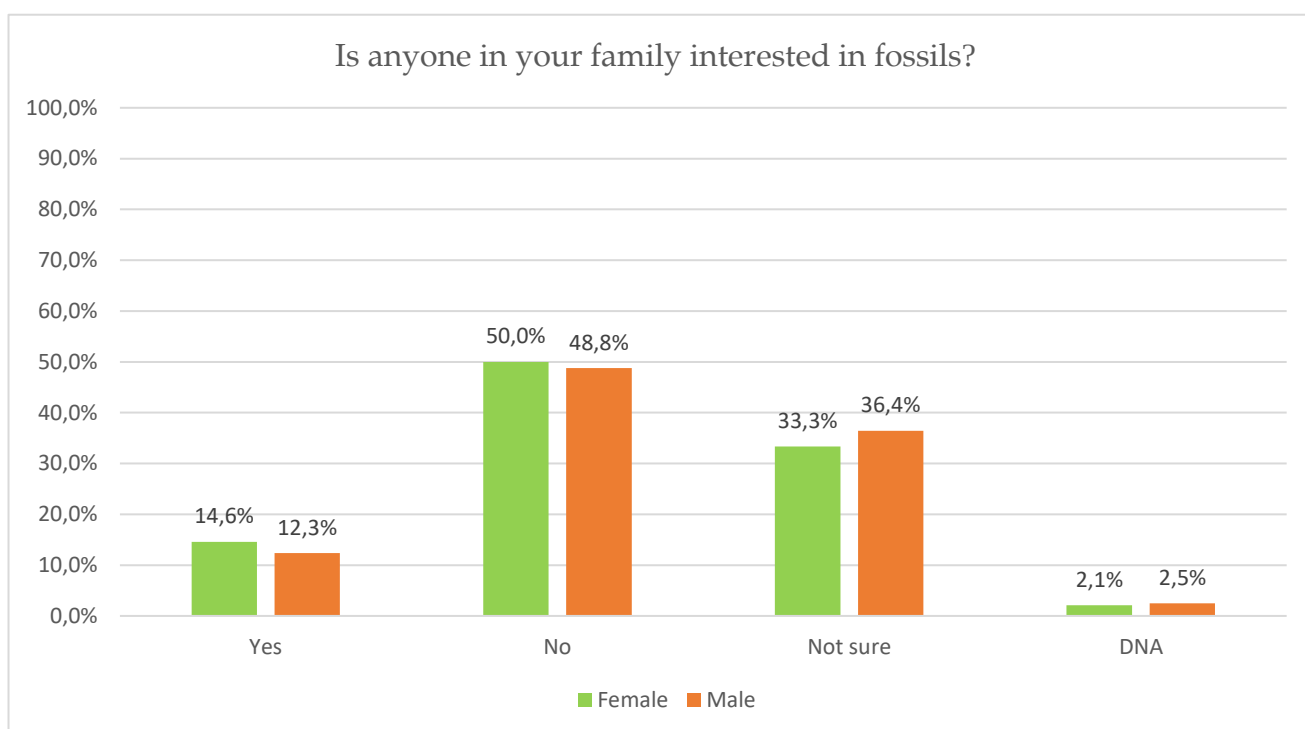
Graphic 55: Representation of the answers to question number six of the Life Sphere Home in 9th Class Portuguese students.

In graphic 55, the entire sample of 144 girls and 162 boys is represented. The majority of responses to whether the students have a family member studying science or working as a scientist for both genders were “No,” with 45.1% for girls and 58% for boys. This was followed by “Yes,” with 39.6% of girls and 22.2% of boys. Only 13.2% of girls and 16% of boys expressed uncertainty.



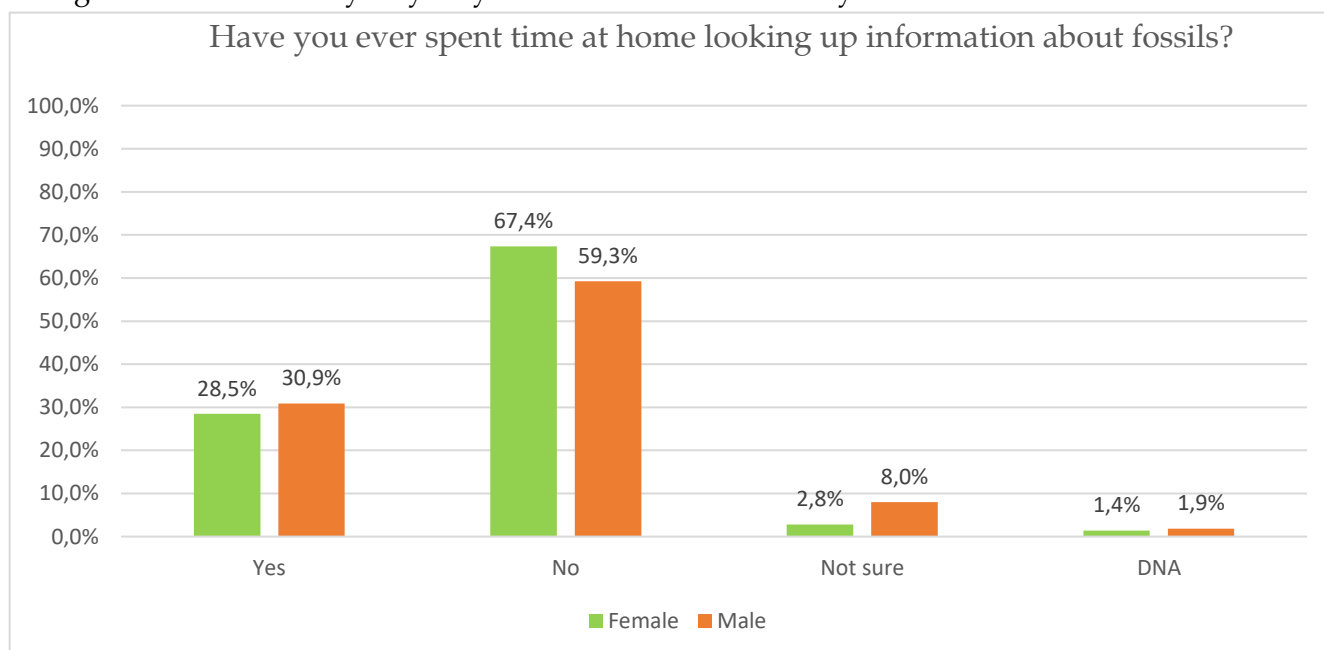
Graphic 56: Representation of the answers to question number seven of the Life Sphere Home in 9th Class Portuguese students.

Graphic 56 depicts a sample comprising 144 girls and 162 boys; however, only 143 girls were included due to an invalid answer. The prevalence response regarding whether students have someone in their family interested in science is “Yes, with 60.1% for girls and 37.7% for boys. Following this 21.7% of female and 34% of male students were unsure, and 16.1% of girls and 25.9% of boys answered with “No”.



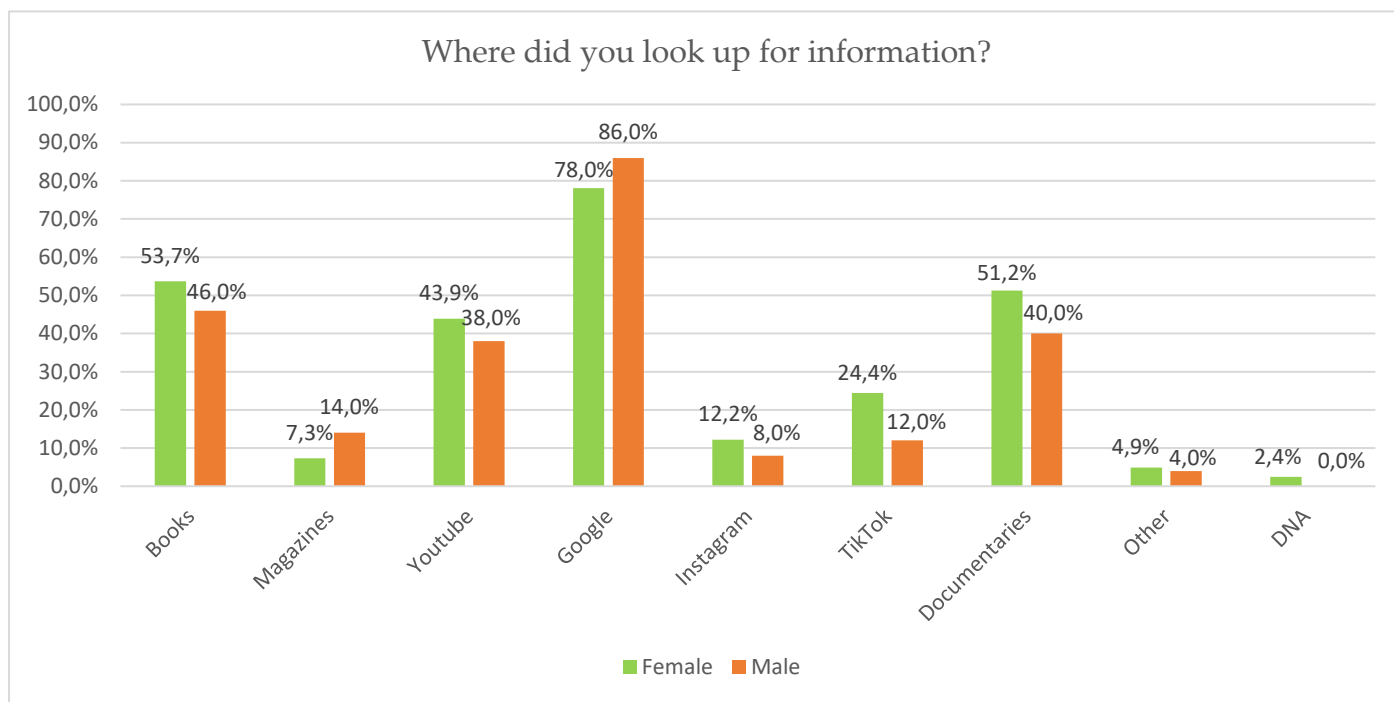
Graphic 57: Representation of the answers to question number eight of the Life Sphere Home in 9th Class Portuguese students.

Graphic 57 represents the total sample of 9th class students who completed the surveys: 144 girls and 162 boys. The most common answer for both genders is “No,” with 50% of girls and 48.8% of boys, followed by “Not sure”, with 33.3% of girls and 36.4% of boys. Only 14.6% of girls and 12.3% of boys say they have someone in the family interested in fossils.



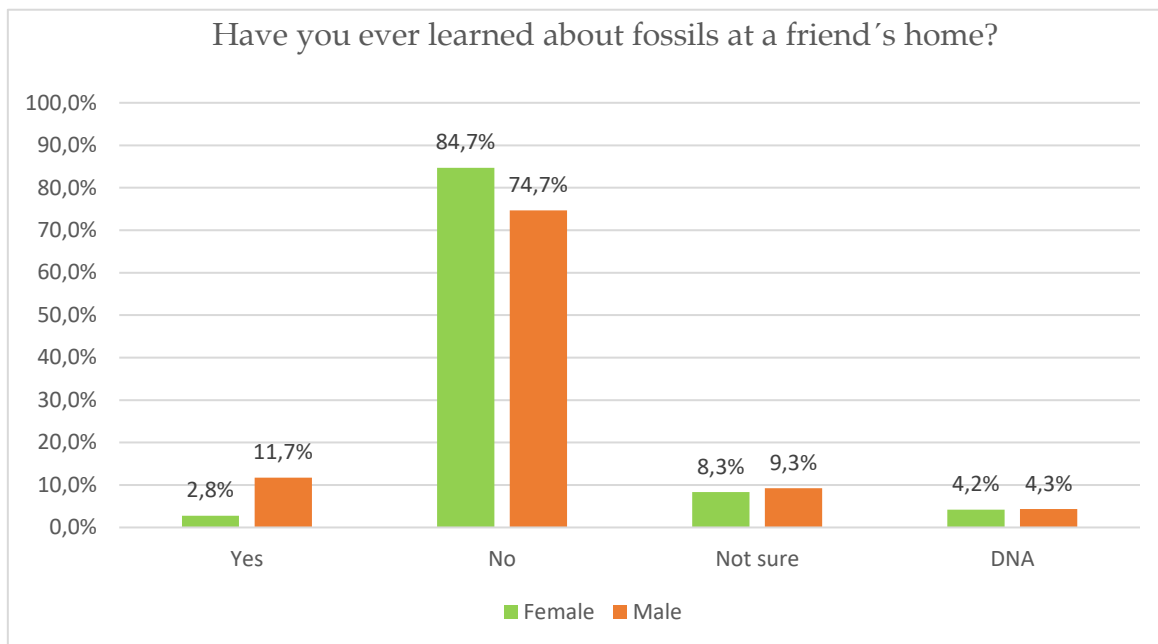
Graphic 58: Representation of the answers to question number nine of the Life Sphere Home in 9th Class Portuguese students.

Graphic 58 illustrates the entire sample of 9th Class students who completed the surveys: 144 girls and 162 boys. The predominant response for both genders (67.4% of girls and 59.3% of boys) indicates that they do not seek information about fossils at home. Instead, 28.5% of girls and 30.9% of boys stated they do, while 2.8% of girls and 8% of boys express uncertainty.



Graphic 59: Representation of the answers to question number ten of the Life Sphere Home in 9th Class Portuguese students.

Graphic 59 focuses solely on students who answered affirmatively to question 9, totalling 41 girls and 50 boys. The most commonly cited source for both genders when seeking information about fossils is Google, with 78% of girls and 86% of boys, followed by books (53.7% of girls and 46% of boys). Documentaries are in third place, with 51.2% of girls and 40% of boys using them as a source to find more information about fossils. YouTube also seems to be popular, with 43.9% of girls and 38% of boys using it. TikTok is also used by 24.4% of girls and 12% of boys who prefer magazines (14%). Both genders also selected the option “Other” (4.9% of girls and 4% of boys), mentioning sources like movies and cartoons, and girls also added “walls”.

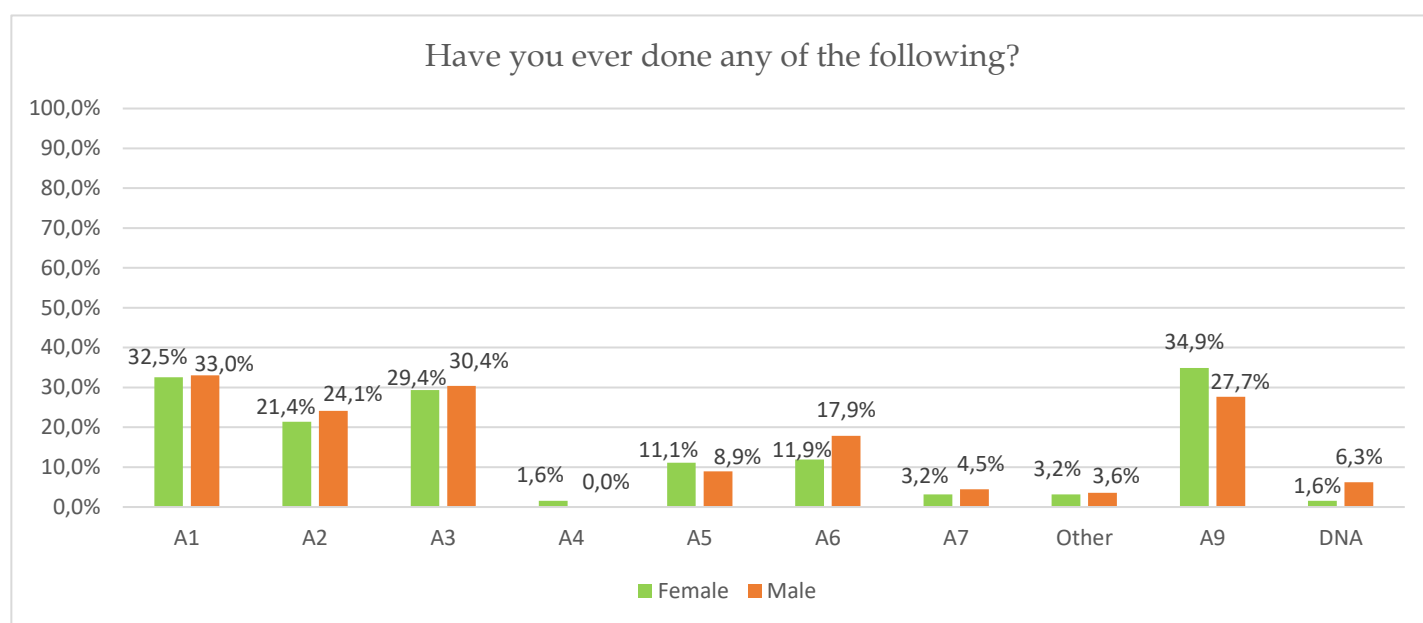


Graphic 60: Representation of the answers to question number eleven of the Life Sphere Home in 9th Class Portuguese students.

Graphic 60 represents the complete sample of 9th class students who completed the surveys: 144 girls and 162 boys. The majority of both genders (84.7% of girls and 74.7% of boys) replied that they never learned about fossils in a friend's home. Only 2.8% of girls and 11.7% of boys reported learning about the subject in a friend's house, while 8.3% of girls and 9.3% of boys expressed uncertainty.

Annexe VI - Graphics from survey results: Portugal Life Sphere Broader Society

7th CLASS



Graphic 61: Representation of the answers to question number one of the Life Sphere Broader Society in 7th Class Portuguese students.

Description

A1 Watch a TV programme or documentary about palaeontology

A2 Watch a YouTube video about palaeontology

A3 Watch a film about palaeontology

A4 Listened to a podcast about palaeontology

A5 Listened to someone talk about palaeontology on the radio

A6 Used apps or games on your phone, tablet and/or computer about palaeontology

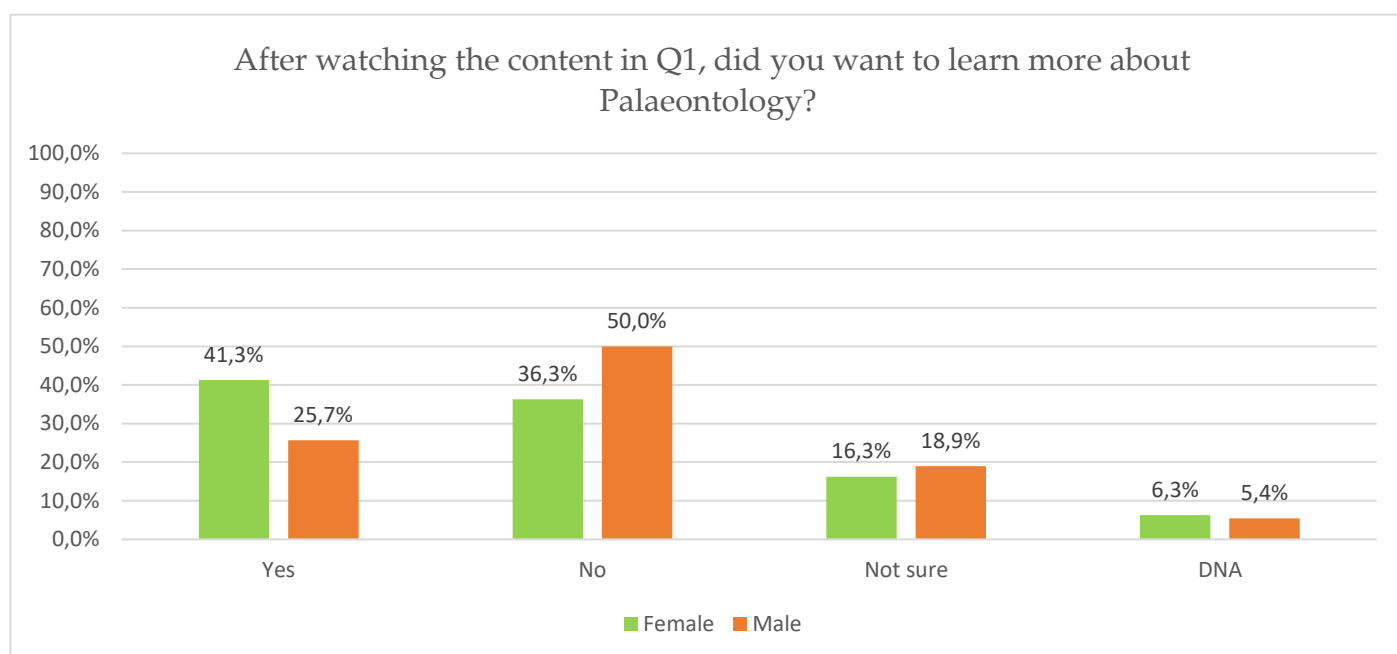
A7 Watch someone give a talk about palaeontology

A9 None of the above

DNA Did Not Answer

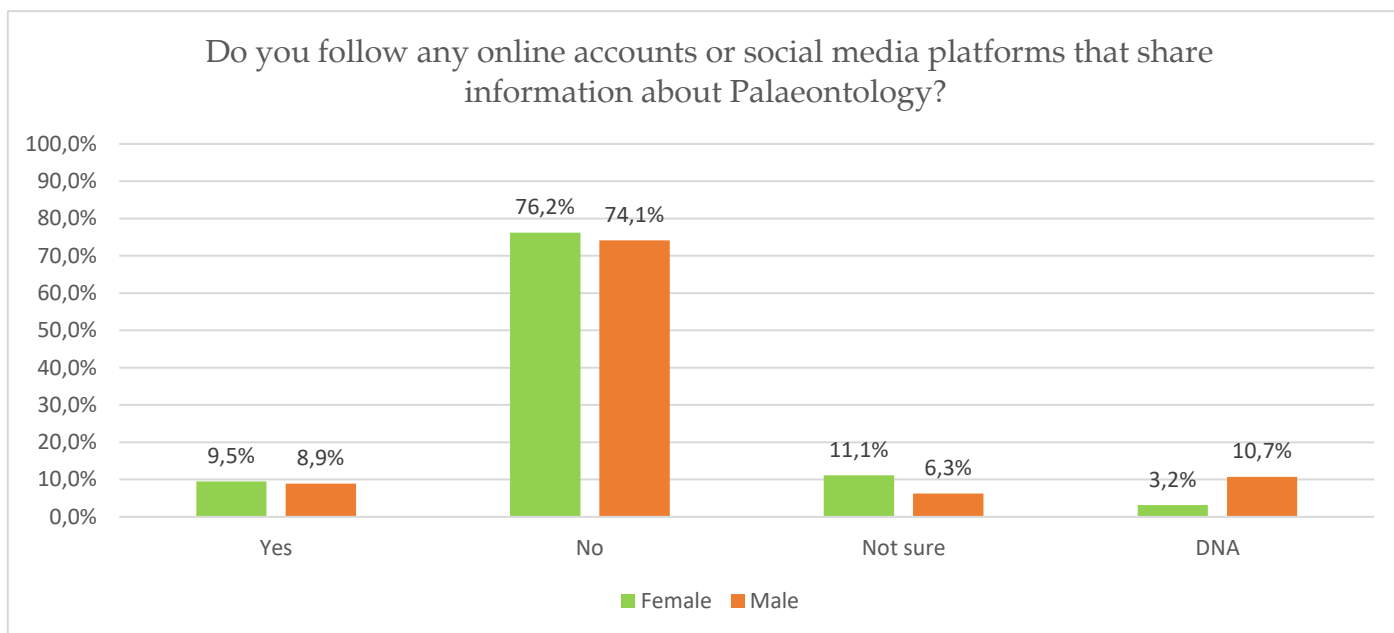
Graphic 61 represents the sample of 7th class female and male students, comprising 126 girls and 112 boys. The majority of the sample, with 34.9% of girls and 27.7% of boys, reported never participating in any activity related to palaeontology. Among those who did, 32.5% of girls and 33% of boys watched a television programme or documentary. Watching a film is also a common activity for both genders (29.4% of girls and 30.4% of boys). The third most common

activity was watching a YouTube video, with 21.4% of girls and 24.1% of boys selecting this option. Less commonly chosen activities include listening to a podcast, with only 1.6% of girls selecting this answer, and watching someone give a talk about palaeontology, chosen by 3.2% of girls and 4.5% of boys. Notably, 3.2% of girls and 3.6% of boys selected the option “Other”, adding visiting a museum and watching videos on “Escola Virtual”. Additionally, girls also added listening to friends talk about fossils, while boys added watching it on the news.



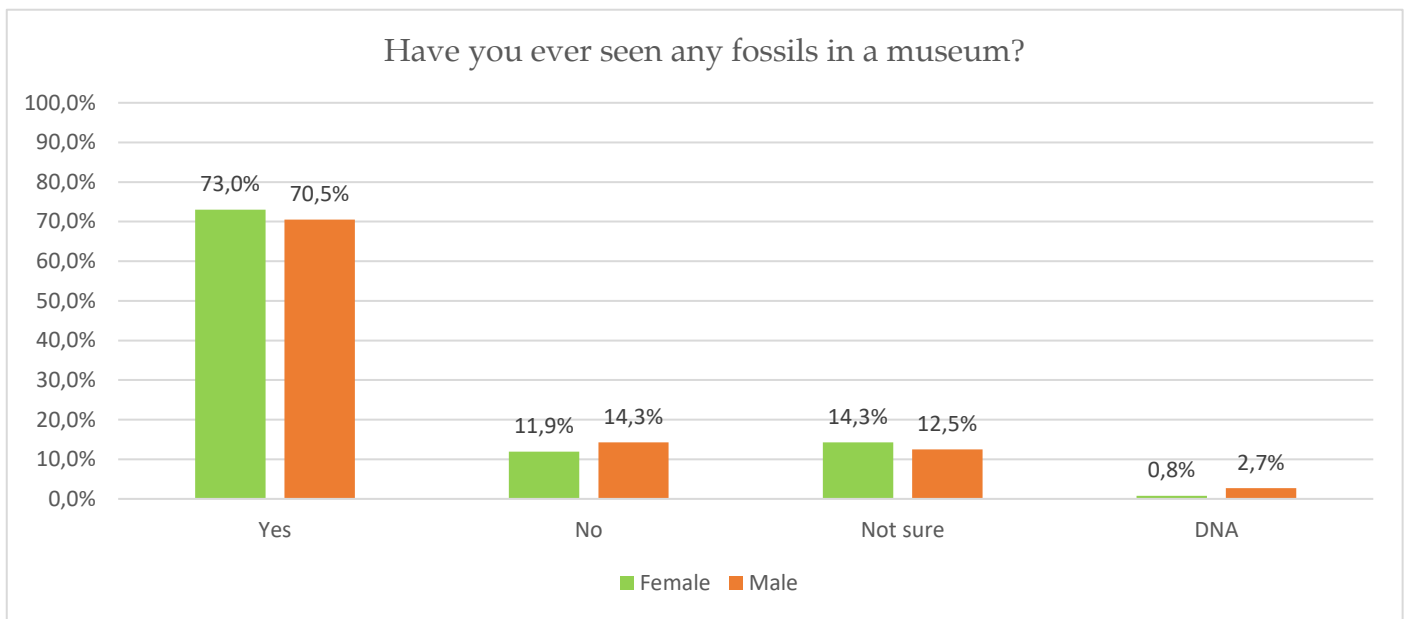
Graphic 62: Representation of the answers to question number two of the Life Sphere Broader Society in 7th Class Portuguese students.

For this graphic, the sample comprises students who responded to question 1, consisting of those who have participated in activities related to palaeontology, totalling 80 girls and 74 boys. Notably, 41.3% of girls have learned something new regarding Palaeontology when participating in palaeontologic activities, while for boys, the majority was “No” with 50%. Only 16.3% of girls and 18.9% of boys express uncertainty.



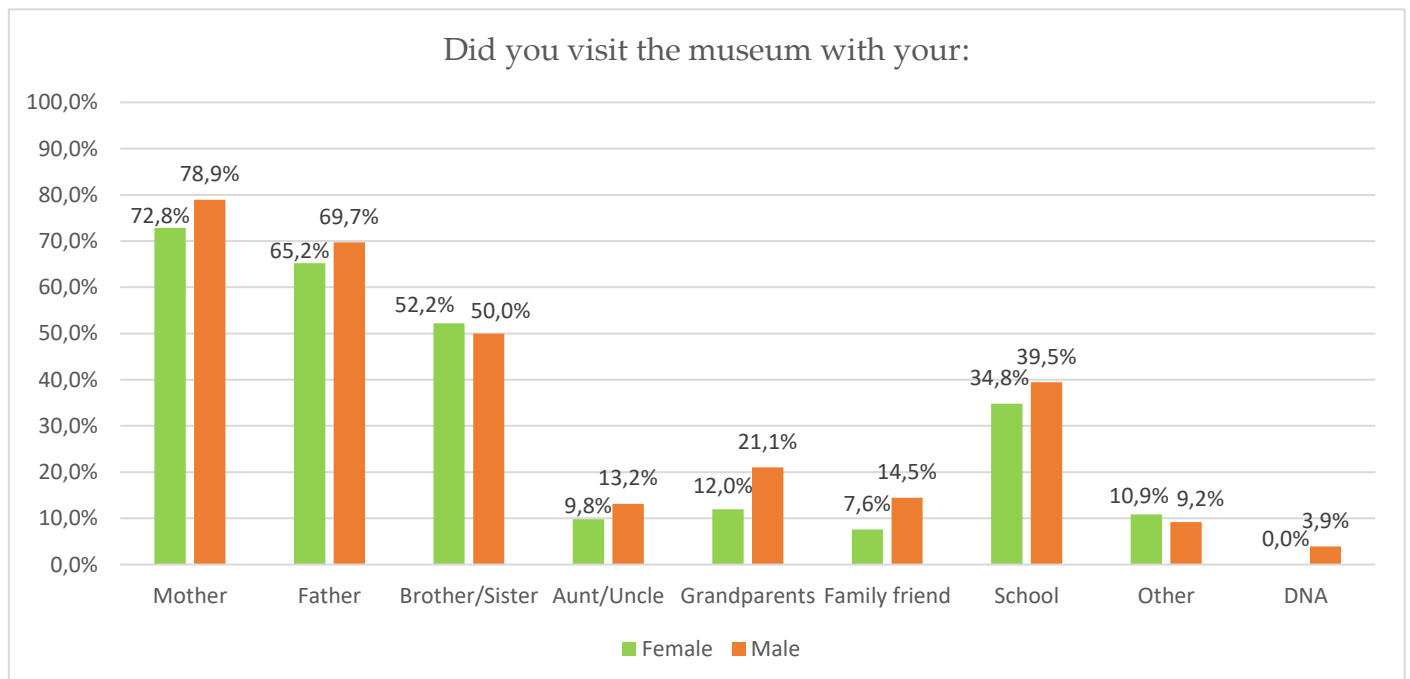
Graphic 63: Representation of the answers to question number three of the Life Sphere Broader Society in 7th Class Portuguese students.

This graphic represents the sample of 7th class female and male students, comprising 126 girls and 112 boys. Notably, the answer with the biggest percentage for both genders is “No” (76.2% of girls and 74.1% of boys). Only 9.5% of girls and 8.9% of boys indicate that they follow online accounts or social media pages about Palaeontology, while 11.1% of girls and 6.3% of boys express uncertainty.



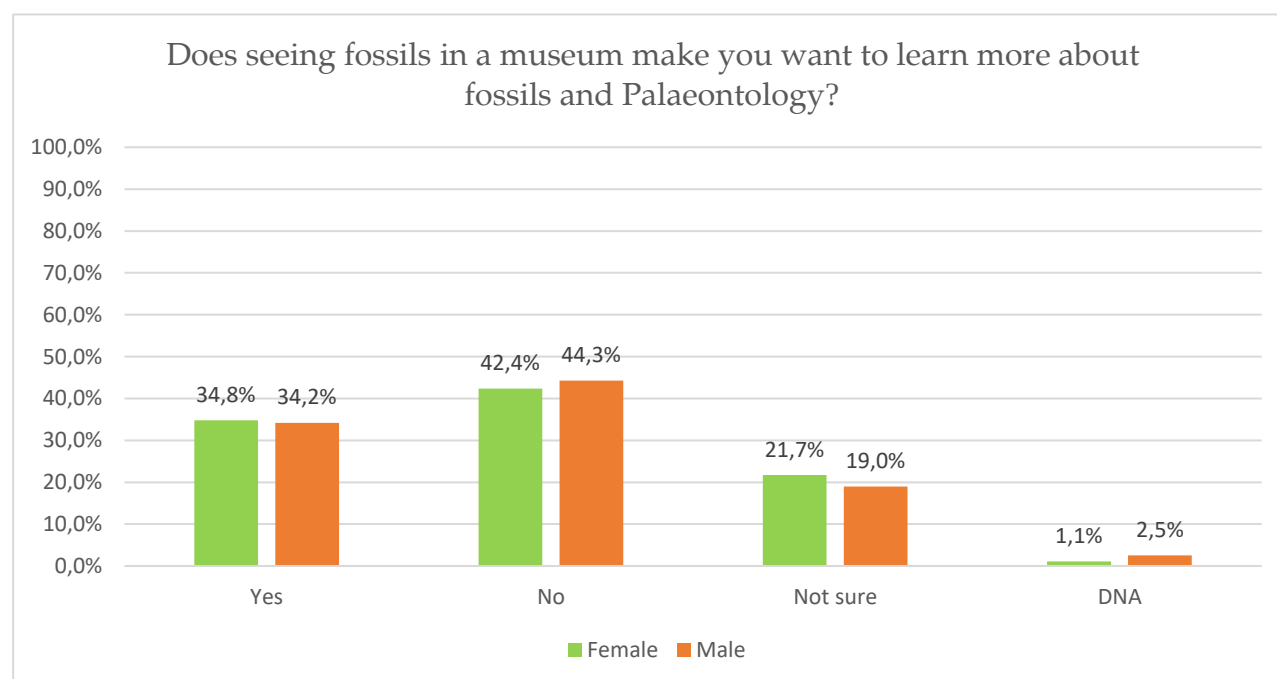
Graphic 64: Representation of the answers to question number four of the Life Sphere Broader Society in 7th Class Portuguese students.

Graphic 64 displays the overall count of students who participated in the surveys: 126 girls and 112 boys. The predominant response among female and male students when asked if they have ever seen fossils in a museum is “Yes”, with 73% of girls and 70.5% of boys. A smaller percentage of 11.9% of girls and 14.3% of boys stated that they had never seen fossils exposed in a museum, while 14.3% of girls and 12.5% of boys expressed uncertainty.



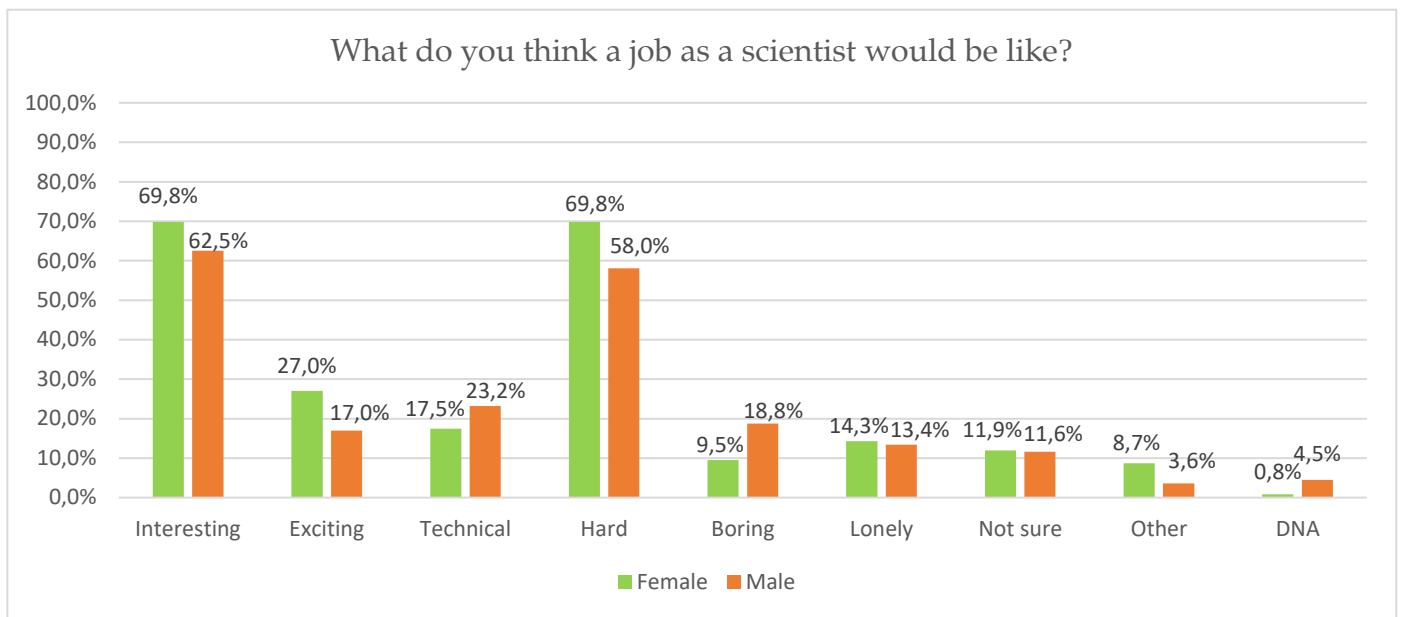
Graphic 65: Representation of the answers to question number five of the Life Sphere Broader Society in 7th Class Portuguese students.

For graphic 65, the sample of students consisted of those who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 92 girls and 79 boys; however, due to 3 invalid questions, only 76 boys were accounted for. The most common answer when asked with whom students visited the museum for both boys and girls is “Mother” (72.8% of girls and 78.9% of boys), followed by their father (65.2% for girls and 69.7% for boys) and their siblings (52.2% for girls and 50% for boys). The school also represents a significant percentage, with 34.8% of girls and 39.5% of boys selecting this option. Grandparents also represent 12% of the answers for girls and 21.1% for boys. Additionally, 10.9% of girls and 9.2% of boys selected the option “Other”, with both genders adding friends, teachers and cousins, and girls also adding summer school.



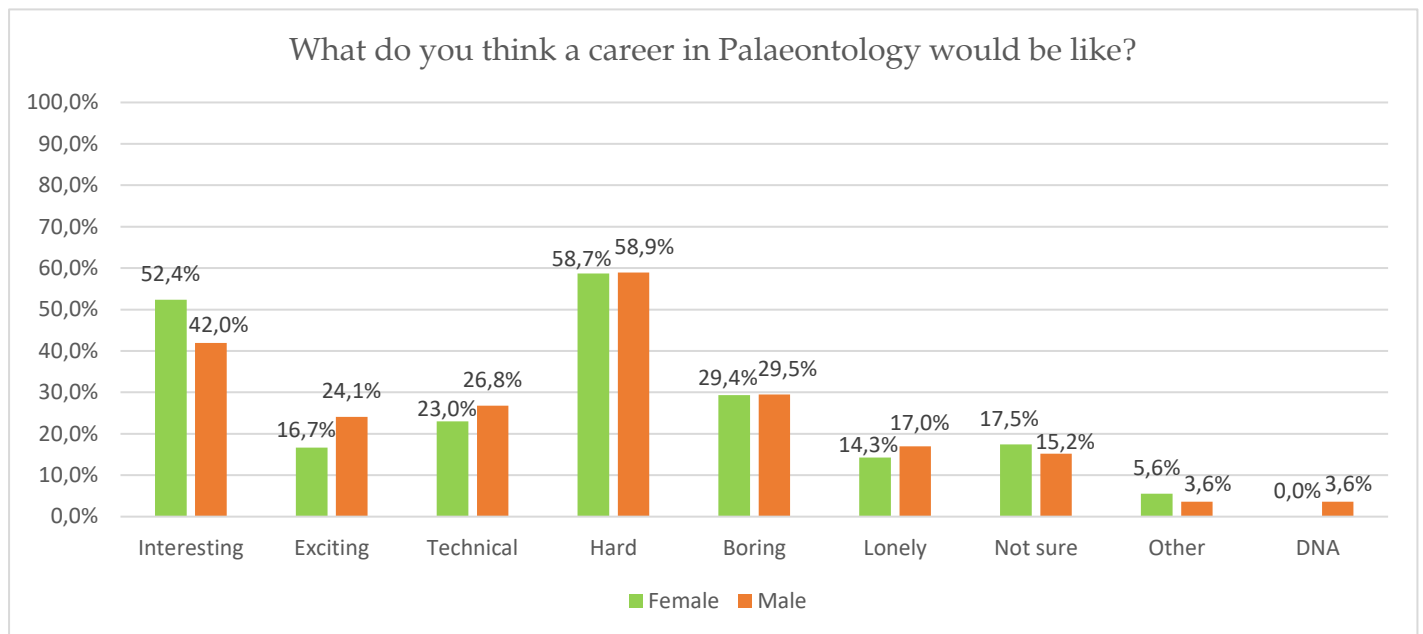
Graphic 66: Representation of the answers to question number six of the Life Sphere Broader Society in 7th Class Portuguese students.

Graphic 66 displays the sample of students who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 92 girls and 79 boys. The predominant response for both genders is “No”, with 42.4% of girls and 44.3% of boys, followed by “Yes”, with 34.8% of girls and 34.2% of boys expressing that seeing fossils in a museum made them want to learn more about them. Furthermore, 21.7% of girls and 19% of boys remained unsure about this question.



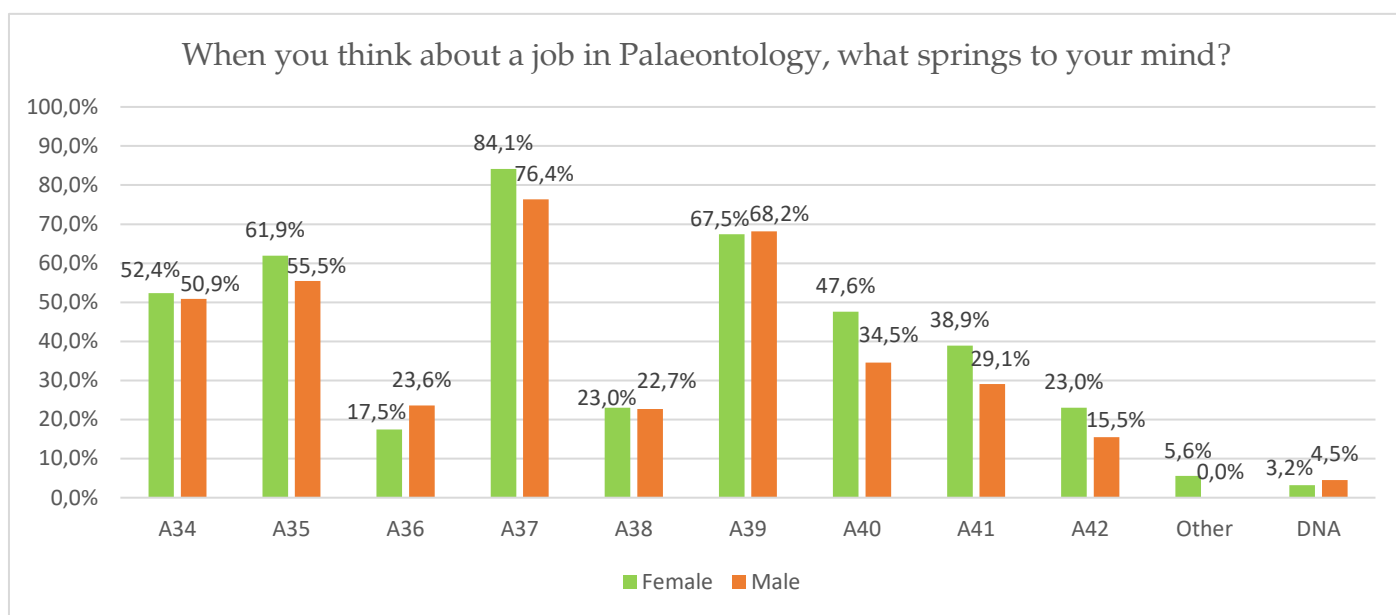
Graphic 67: Representation of the answers to question number seven of the Life Sphere Broader Society in 7th Class Portuguese students.

Graphic 67 displays the overall count of students who participated in the surveys: 126 girls and 112 boys. When asked if students knew what a job as a scientist would be like, 69.8% of girls expressed being interesting and difficult, while for boys, 62.5% selected interesting, and 58% chose the option “Hard”. For 27% of girls, a job as a scientist is exciting compared with 17% of boys, and technical for 17.5% of girls and 23.2% of boys. A similar percentage of students (14.3% of girls and 13.4% of boys) think it’s lonely, while 9.5% of female and 18.8% of male students think it's boring. A small percentage of 8.7% of girls and 3.6% of boys selected the option “Other”, citing that the job could also be demanding and complicated, with girls adding that it’s a job with much responsibility and “magnificent” and boys saying that it would be a new experience every time and “cool”.



Graphic 68: Representation of the answers to question number eight of the Life Sphere Broader Society in 7th Class Portuguese students.

Graphic 68 illustrated the total number of students who participated in the surveys: 126 girls and 112 boys. Regarding the question about what do students think a job as a palaeontologist would be like, 58.7% of girls and 58.9% of boys agree that it's hard, followed by interesting by 52.4% of girls and 42% of boys. Additionally, with similar percentages, 29.4% of girls and 29.5% of boys expressed that it's a boring job and technical (23% of girls and 26.8% of boys). Regarding the answer "Exciting", 16.7% of girls and 24.1% of boys selected this option, while 14.3% of girls and 17% of boys think it is lonely. In this question, both genders selected the option "Other", with 5.6% of girls adding happy, fun, tiring, a new challenge and laborious, and 3.6% of boys adding fascinating, "cool", and curious.



Graphic 69: Representation of the answers to question number nine of the Life Sphere Broader Society in 7th Class Portuguese students.

Description

A34 Working in a lab a lot

A35 Going on field trips a lot

A36 Meetings all-day

A37 Excavating and preparing fossils

A38 Work alone

A39 Work with a team

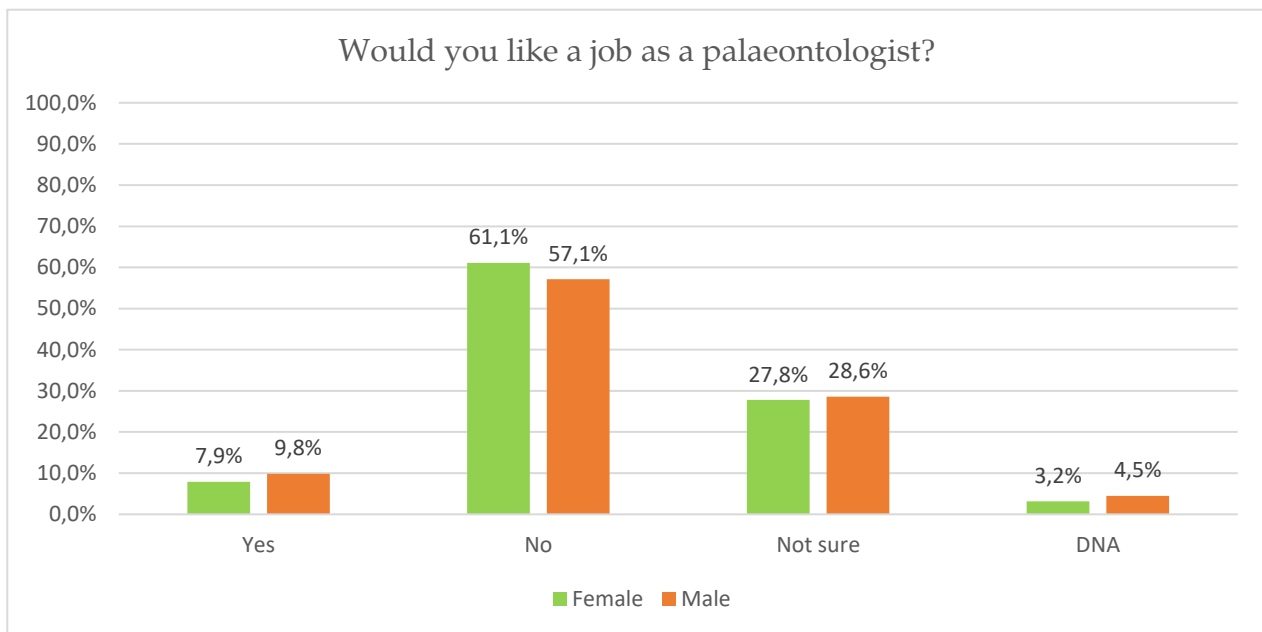
A40 Drawing dinosaurs and other extinct animals

A41 Giving lectures and talks

A42 Working in a museum

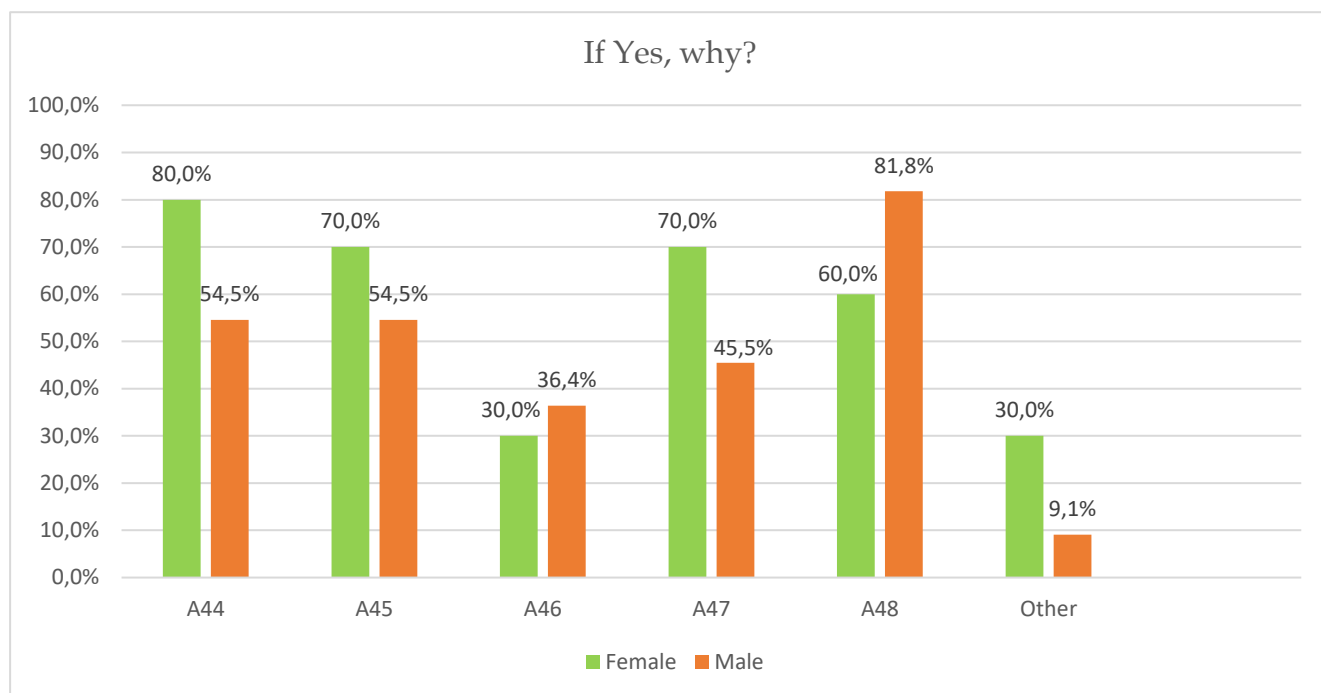
DNA Did Not Answer

Graphic 69 displays the overall count of students who participated in the surveys: 126 girls and 112 boys; however, due to 2 invalid questions, only 110 boys were accounted for. The most common response when asking students what they think palaeontologists do, is excavating and preparing fossils, with 84.1% of girls and 76.4% of boys selecting this answer, followed by working in a team (67.5% for girls and 68.2% for boys) and going on field trips a lot (61.9% of girls and 55.5% of boys). Some other common answers are working in a laboratory, with 52.4% of girls and 50.9% of boys selecting this and drawing dinosaurs and other extinct animals (47.6% of girls and 34.5% of boys). Some less common responses were having meetings all day for girls at 17.5% and working in a museum at 15.5% for boys. Female students (5.6%) also added in “Other” that they think palaeontologists travel a lot for work and study the fossils they excavate.



Graphic 70: Representation of the answers to question number ten of the Life Sphere Broader Society in 7th Class Portuguese students.

Graphic 70 displays the total sample of students who replied to the surveys, totalling 126 girls and 112 boys. The predominant response when asked if they would like a job as a palaeontologist for both genders is “No,” with 61.1% of girls and 57.1% of boys, followed by “Not sure”, with 27.8% of girls and 28.6% of boys. Only 7.9% of girls and 9.8% of boys selected having an interest in a job in palaeontology.



Graphic 71: Representation of the answers to question number eleven of the Life Sphere Broader Society in 7th Class Portuguese students.

Description:

A44 I want to learn more about extinct animals and plants

A45 I want to learn more about extinctions

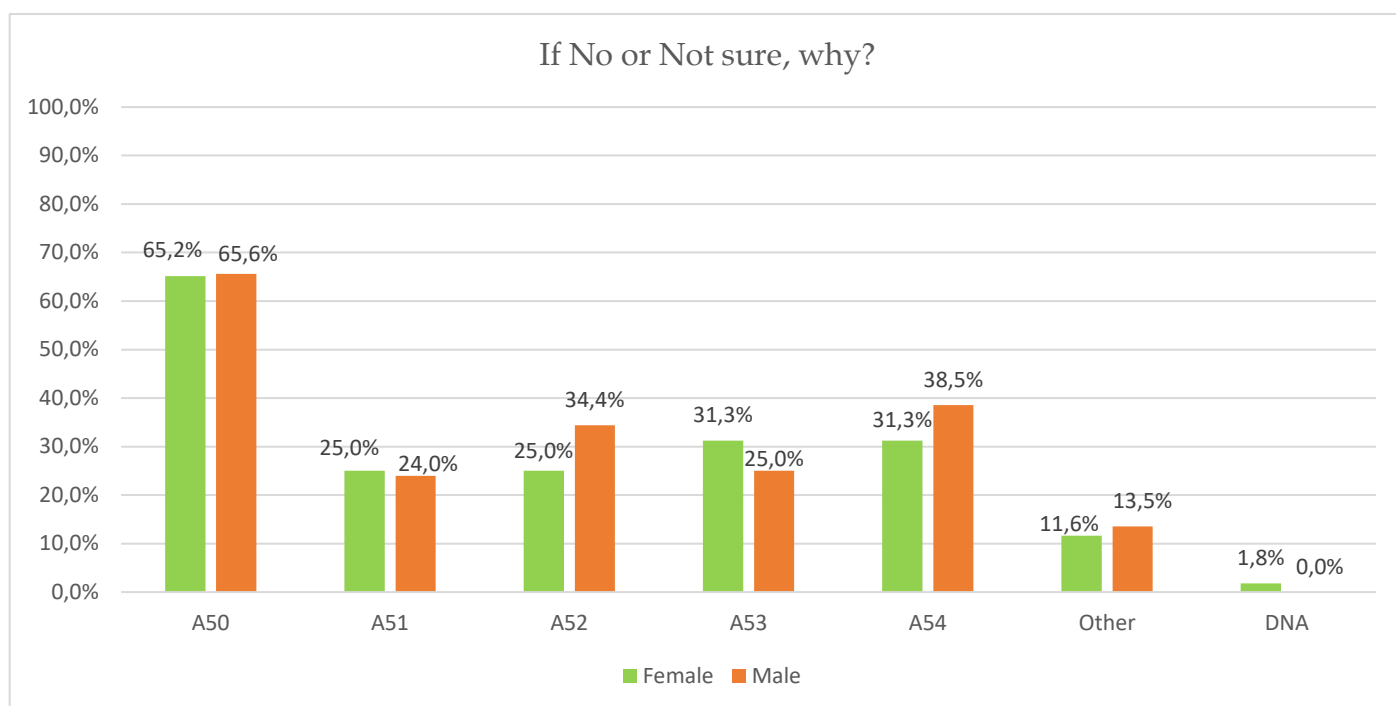
A46 I like dinosaurs

A47 I like fossils

A48 I think learning about the past is fascinating

Graphic 71 showcases the subset of students who replied positively to question 10 of the Broader Society Life Sphere, amounting 10 girls and 11 boys. Among girls, the primary reason for aspiring to become palaeontologists is the desire to learn more about extinct animals and plants (80%), followed by an interest in extinctions and liking fossils (70%). Most girls (60%) also find learning about the past fascinating, and 30% of the female students express liking dinosaurs and “Other” reasons, which include wanting to understand what happened in the past and wanting to know more about the first live forms. As for boys, the most predominant answer (81.8%) is finding learning about the past fascinating, followed by a desire to know more about extinct animals and plants and extinctions (54.5%). The third most common response, at 45.5%, is liking fossils, and 36.4% liking dinosaurs. Additionally, 9.1% of male students selected “Other”, indicating an interest in the field of palaeontology, and 30% of girls

think learning about the first living beings is interesting and want to learn more about how the first animals came to be.



Graphic 72: Representation of the answers to question number twelve of the Life Sphere Broader Society in 7th Class Portuguese students.

Description

A50 I have never thought about it

A51 I am not interested in planet Earth's past

A52 It's boring

A53 It's too hard

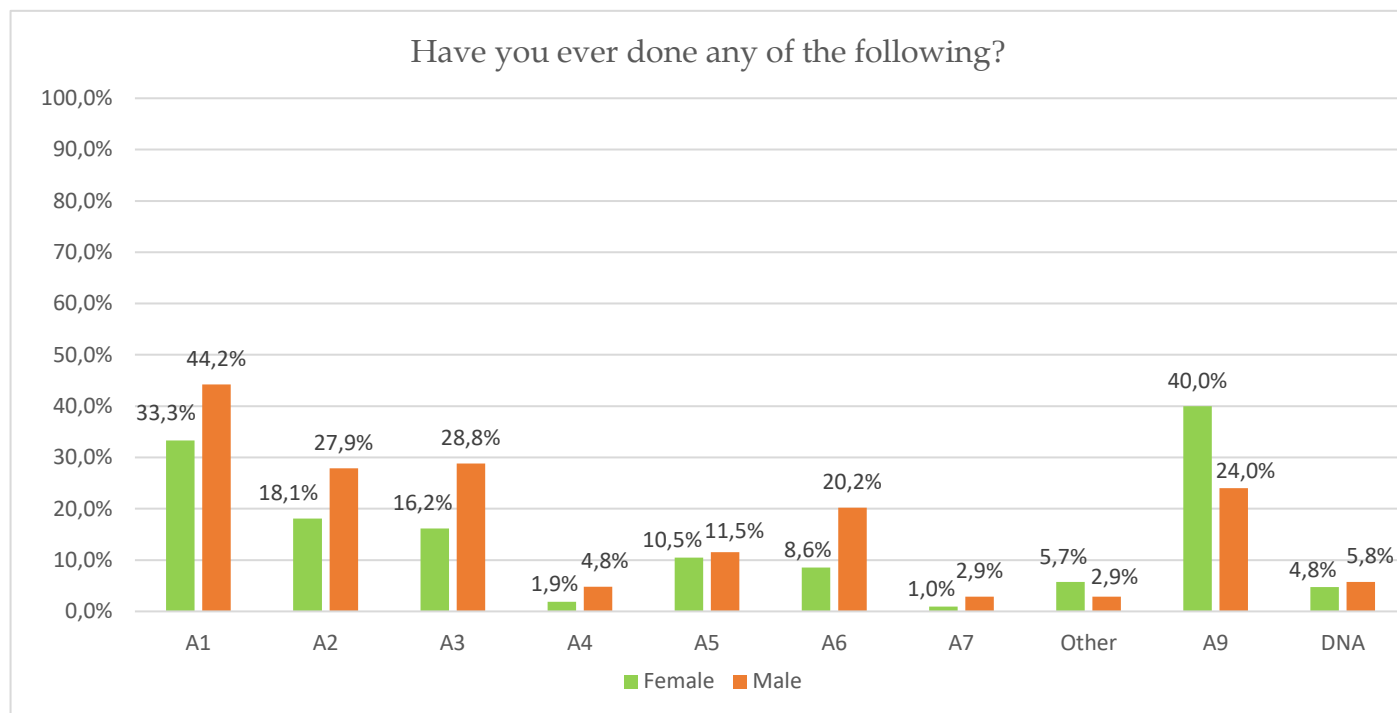
A54 I don't like the subjects

DNA Did Not Answer

For graphic 72, it was considered the total number of students who replied "No" or "Not sure" to question 10; this includes 112 girls and 96 boys. The primary reason cited for both genders (65.2% of girls and 65.6% of boys) for not aspiring to become palaeontologists is that they have never thought about it. Among girls, the second most common reason is finding it too hard and disliking the subject, accounting for 31.3%, while for boys, disliking the subject is the second most prevalent (38.5%). Regarding finding it boring, 25% of girls and 34.4% of boys agree. Additionally, 25% of female and 24% of male students express a lack of interest in planet Earth's past, with 13.5% of boys selecting the option "Other", citing reasons such as perceiving it as a profession with no professional and financial future, others do not consider it necessary and lacking prestige. Both genders also indicate that they do not intend to pursue a career as

a palaeontologist in the future because it is not an area of interest, and they already have other plans in mind.

8th CLASS



Graphic 73: Representation of the answers to question number one of the Life Sphere Broader Society in 8th Class Portuguese students.

Description:

A1 Watch a TV programme or documentary about palaeontology

A2 Watch a YouTube video about palaeontology

A3 Watch a film about palaeontology

A4 Listened to a podcast about palaeontology

A5 Listened to someone talk about palaeontology on the radio

A6 Used apps or games on your phone, tablet and/or computer about palaeontology

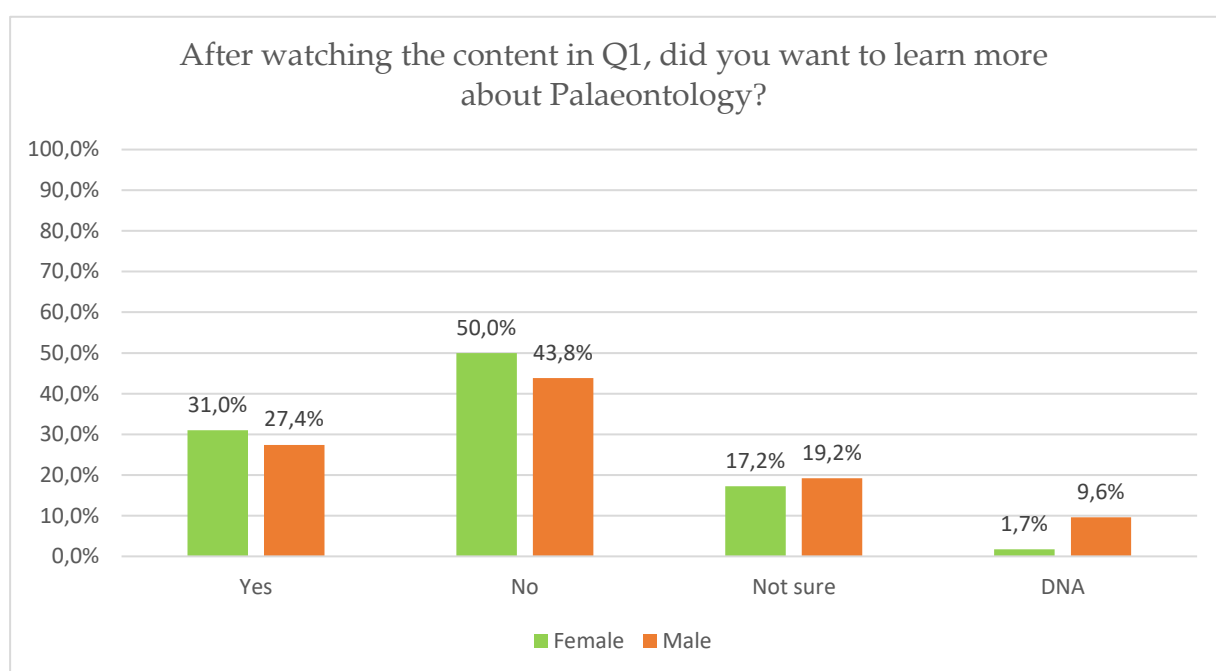
A7 Watch someone give a talk about palaeontology

A9 None of the above

DNA Did Not Answer

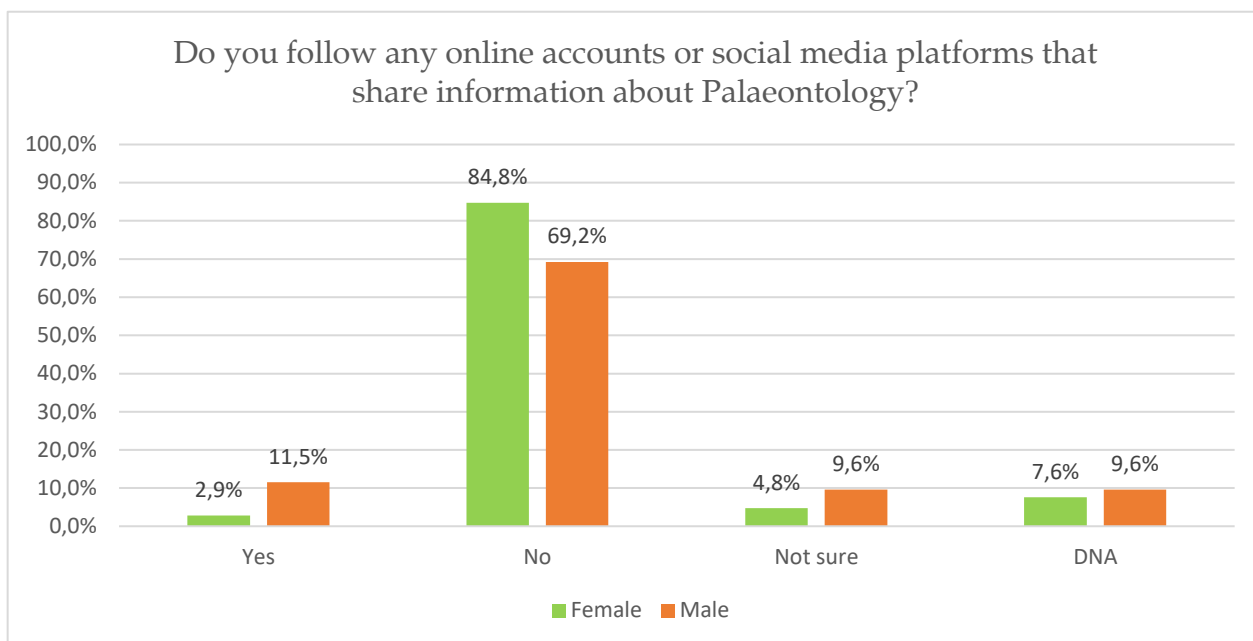
Graphic 73 represents the total sample of 8th class female and male students, comprising 105 girls and 104 boys. More girls (40%) reported never participating in any activity related to palaeontology, compared to 24% of boys. Among those who did, the most common activity for both genders (33.3% of girls and 44.2% of boys) was watching a television programme or documentary. Watching a film is also common for boys (28.8%), similar to watching a YouTube video about palaeontology (27.9%), while for girls, that is the second most

predominant answer (18.1%), followed by watching a film (16.2%). Less commonly chosen activities include listening to a podcast, with only 1.9% of girls and 4.8% of boys selecting this answer, and watching someone give a talk about palaeontology, chosen by 1% of girls and 2.9% of boys. Notably, 5.7% of girls and 2.9% of boys selected the option “Other”, adding visiting a museum, watching videos on “Escola Virtual”, playing with dinosaur toys, the teacher showing a video about palaeontology in class and trying to identify fossils in school as part of a class activity. Additionally, some girls also added that they made a personal collection of fossils.



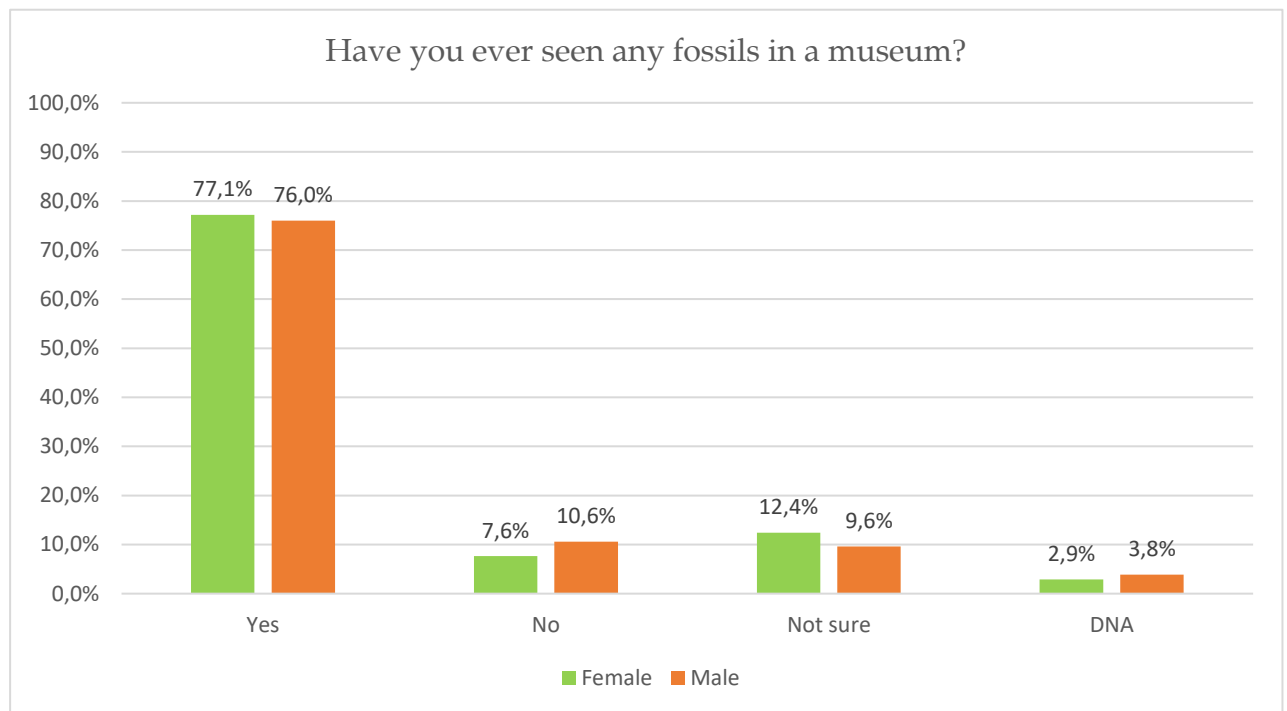
Graphic 74: Representation of the answers to question number two of the Life Sphere Broader Society in 8th Class Portuguese students.

For this graphic, the sample comprises students who responded to question 1 consisting of those who have participated in activities related to palaeontology, totalling 58 girls and 73 boys. Notably, the most predominant answer is “No”, with 50% of girls and 43.8% of boys. Moreover, 31 % of girls and 27.4% of boys expressed that they did learn something new when participating in palaeontological activities. Only 17.2% of girls and 19.2% of boys express uncertainty.



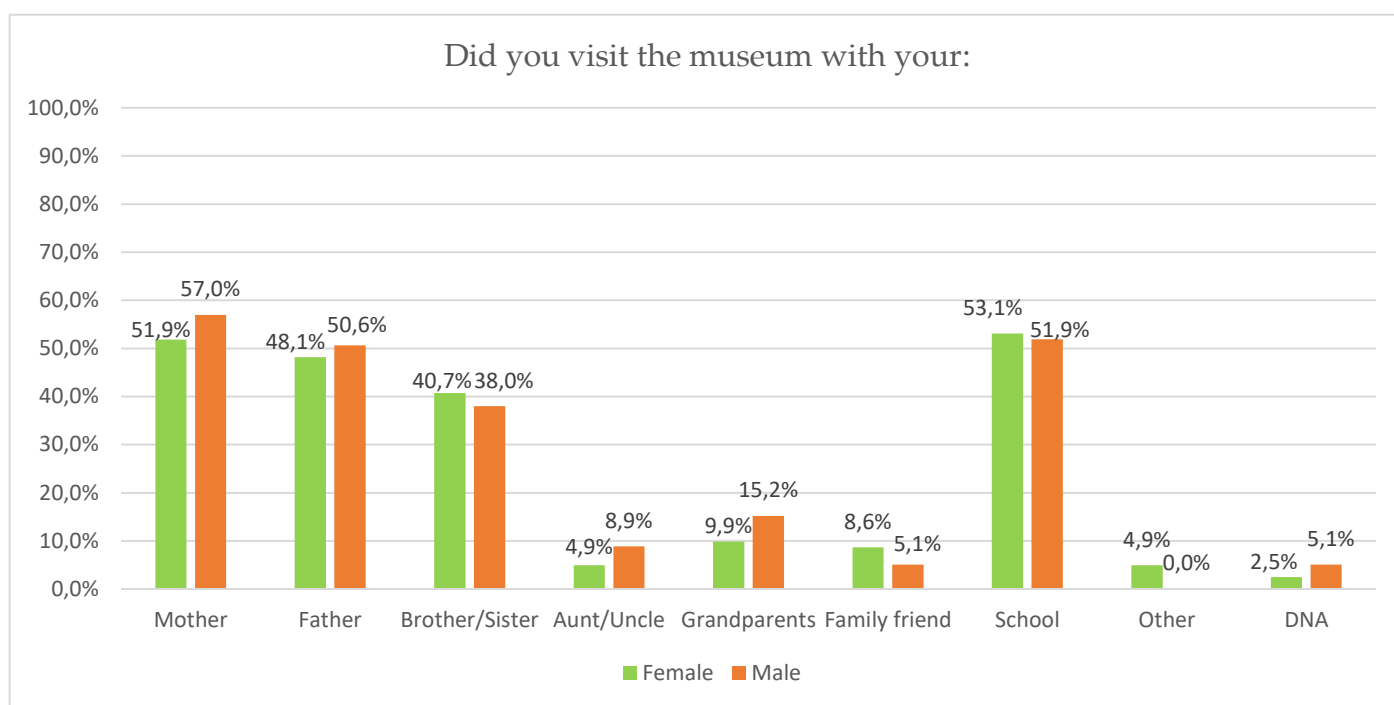
Graphic 75: Representation of the answers to question number three of the Life Sphere Broader Society in 8th Class Portuguese students.

This graphic represents the total sample of 8th class female and male students, comprising 105 girls and 104 boys. The response with the biggest percentage for both genders is “No” (84.8% of girls and 69.2% of boys). Only 2.9% of girls and 11.5% of boys indicate that they follow online accounts or social media pages about palaeontology, while 4.8% of girls and 9.6% of boys express uncertainty.



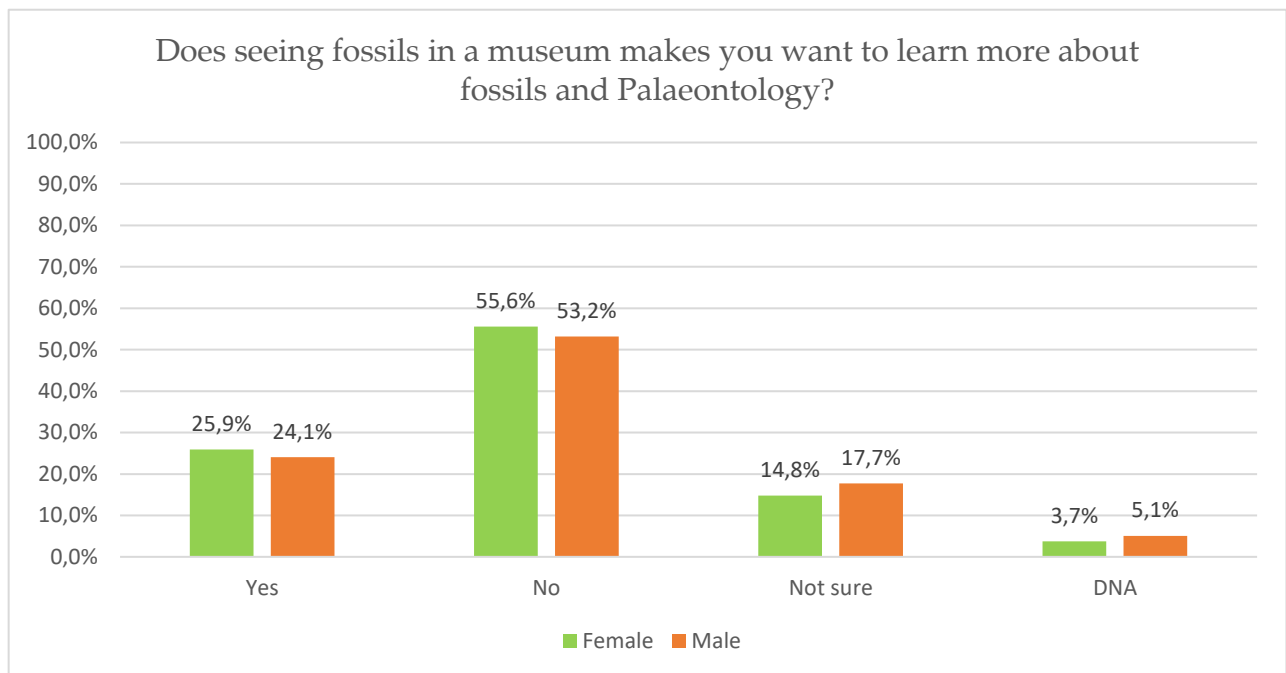
Graphic 76: Representation of the answers to question number four of the Life Sphere Broader Society in 8th Class Portuguese students.

Graphic 76 displays the overall count of students who participated in the surveys: 105 girls and 104 boys. The predominant response among female and male students when asked if they have ever seen fossils in a museum is “Yes”, with 77.1% of girls and 76% of boys. A smaller percentage of 7.6% of girls and 10.6% of boys stated that they had never seen fossils exposed in a museum, while 12.4% of girls and 9.6% of boys expressed uncertainty.



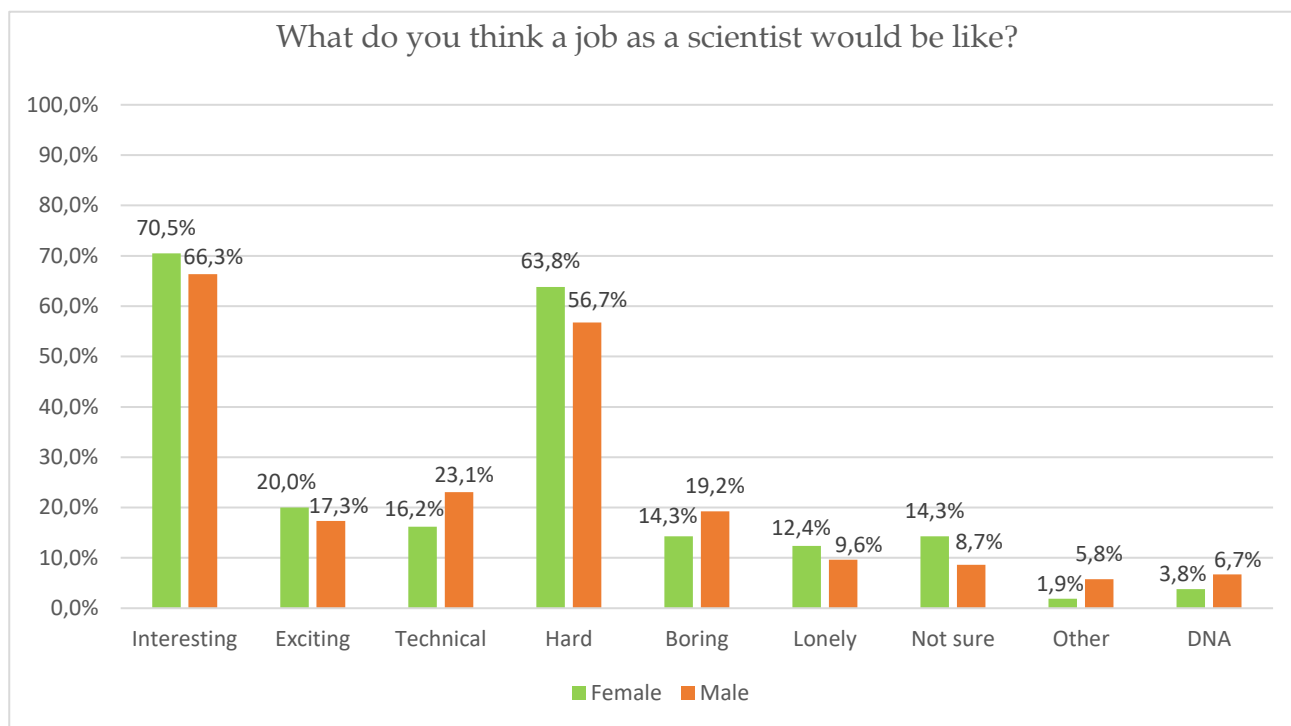
Graphic 77: Representation of the answers to question number five of the Life Sphere Broader Society in 8th Class Portuguese students.

For graphic 77, the sample of students consisted of those who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 81 girls and 79 boys. The two most predominant answers regarding who students visited the museum with are school (53,1% of girls and 51.9% of boys) and mother (51.9% of girls and 57% of boys). This is followed by father (48.1% for girls and 50.6% for boys) and siblings (40.7% for girls and 38% for boys). Grandparents account for 9.9% of the responses for girls and 15.2% for boys. Additionally, 4.9% of girls selected the option “Other”, adding friends and stepmother.



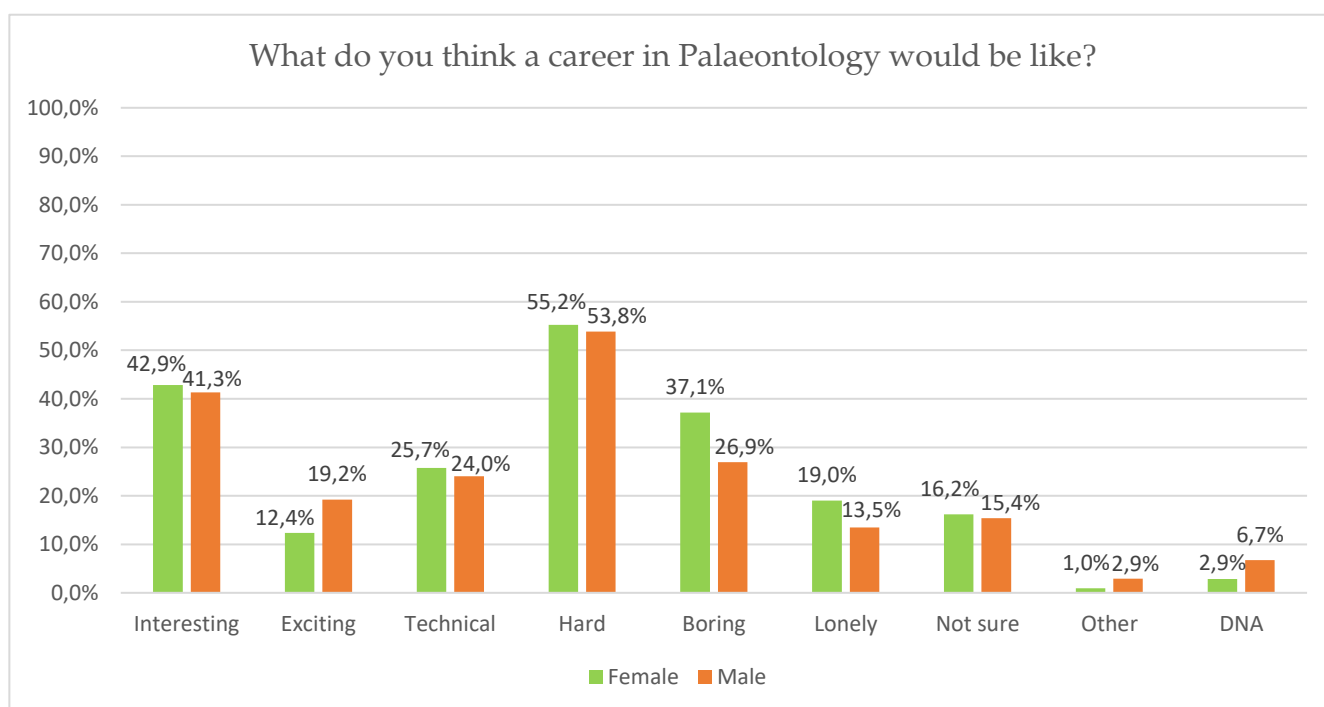
Graphic 78: Representation of the answers to question number six of the Life Sphere Broader Society in 8th Class Portuguese students.

Graphic 78 displays the sample of students who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 81 girls and 79 boys. When asked if seeing fossils in a museum made them want to learn more about the subject, the predominant response for both genders is “No”, with 55.6% of girls and 53.2% of boys, followed by “Yes”, with 25.9% of girls and 24.1% of boys. Furthermore, 14.8% of girls and 17.7% of boys remained unsure.



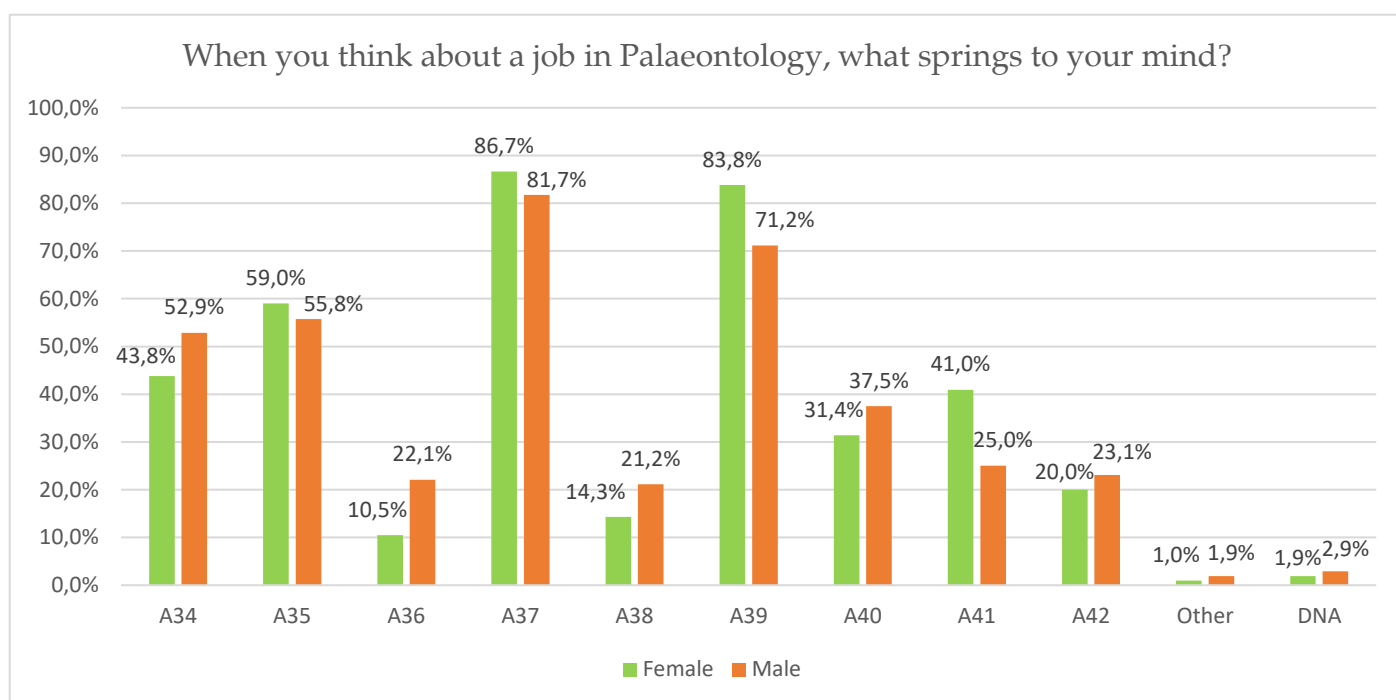
Graphic 79: Representation of the answers to question number seven of the Life Sphere Broader Society in 8th Class Portuguese students.

Graphic 79 displays the overall count of students who participated in the surveys: 105 girls and 104 boys. When asked if students knew what a job as a scientist would be like, the most predominant response was interesting, with 70.5% of girls and 66.3% of boys selecting this answer. Hard is the second most preferred option, with 63.8% of girls and 56.7% of boys selecting it. For 20% of girls, a job as a scientist is exciting compared with 17.3% of boys, and technical for 16.2% of girls and 23.1% of boys. Additionally, some students (14.3% of girls and 19.2% of boys) think it's boring, while 12.4% of female and 9.6% of male students think it's lonely. Furthermore, 1.9% of girls selected the option "Other", citing that the job could also be dangerous, fantastic and annoying, with 5.8% of boys adding funny, tiring, fun, depressive and "cool".



Graphic 80: Representation of the answers to question number eight of the Life Sphere Broader Society in 8th Class Portuguese students.

Graphic 80 illustrated the total number of students who participated in the surveys: 105 girls and 104 boys. When asked about the nature of a job as a palaeontologist, the most selected answer by both genders is that it is hard (55.2% of girls and 53.8% of boys), followed by interesting by 42.9% of girls and 41.3% of boys. Additionally, 37.1% of girls and 26.9% of boys expressed that it's a boring job, while 12.4% of girls and 19.2% of boys say it is exciting. Regarding the answer "Technical", 25.7% of girls and 24% of boys selected this option, while 19% of girls and 13.5% of boys think it is lonely. In this question, both genders selected the option "Other", with 1% of girls adding tiring and annoying, and 2.9% of boys citing fun, different, depressive and "cool".



Graphic 81: Representation of the answers to question number nine of the Life Sphere Broader Society in 8th Class Portuguese students.

Description

A34 Working in a lab a lot

A35 Going on field trips a lot

A36 Meetings all-day

A37 Excavating and preparing fossils

A38 Work alone

A39 Work with a team

A40 Drawing dinosaurs and other extinct animals

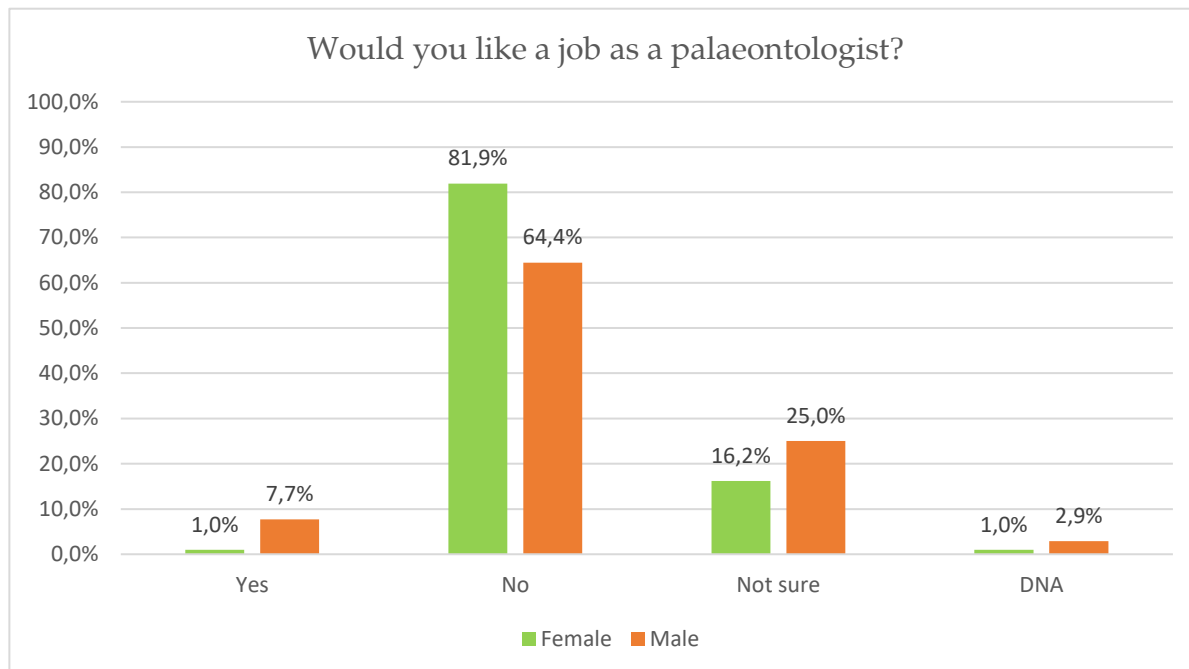
A41 Giving lectures and talks

A42 Working in a museum

DNA Did Not Answer

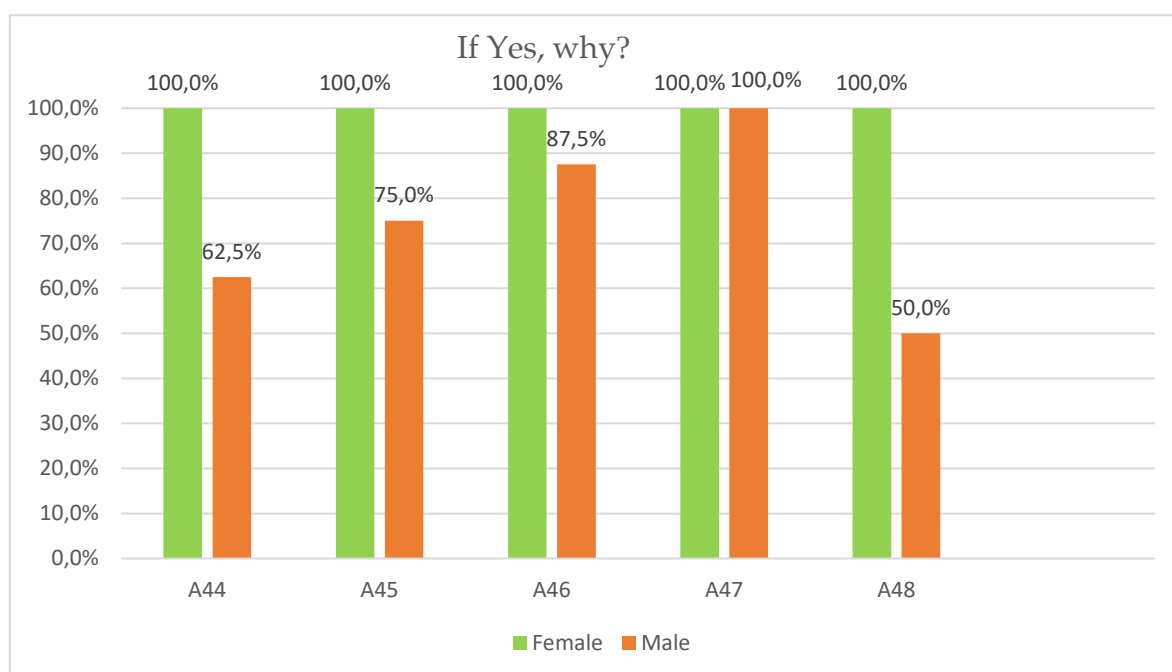
Graphic 81 displays the overall count of students who participated in the surveys: 105 girls and 104 boys. The most common response when asking students what they think palaeontologists do, is excavating and preparing fossils, with 86.7% of girls and 81.7% of boys selecting this answer, followed by working in a team (83.8% for girls and 71.2% for boys). Going on field trips is also a big percentage (59% of girls and 55.8% of boys). Another standard answer is working in a laboratory, with 43.8% of girls and 52.9% of boys selecting this. Notably, 41% of female students say that giving lectures and talks is also part of a palaeontologist's work compared with 25% of boys. Drawing dinosaurs and other extinct animals is also common (31.4% of girls and 37.5% of boys). Some fewer common responses were having meetings all day for girls at 10.5%, and for boys, the less selected was working alone (21.2%). Both genders (1% of

girls and 1.9% of boys) also selected the option “Other”, citing that palaeontologists study the fossils they excavated. The boys also added that palaeontologists travel a lot.



Graphic 82: Representation of the answers to question number ten of the Life Sphere Broader Society in 8th Class Portuguese students.

Graphic 82 displays the total sample of students who replied to the surveys, totalling 105 girls and 104 boys. The predominant response when asked if they would like a job as a palaeontologist for both genders is “No,” with 81.9% of girls and 64.4% of boys, followed by “Not sure,” with 16.2% of girls and 25% of boys. Only 1% of girls and 7.7% of boys selected having an interest in a job in palaeontology.



Graphic 83: Representation of the answers to question number eleven of the Life Sphere Broader Society in 8th Class Portuguese students.

Description

A44 I want to learn more about extinct animals and plants

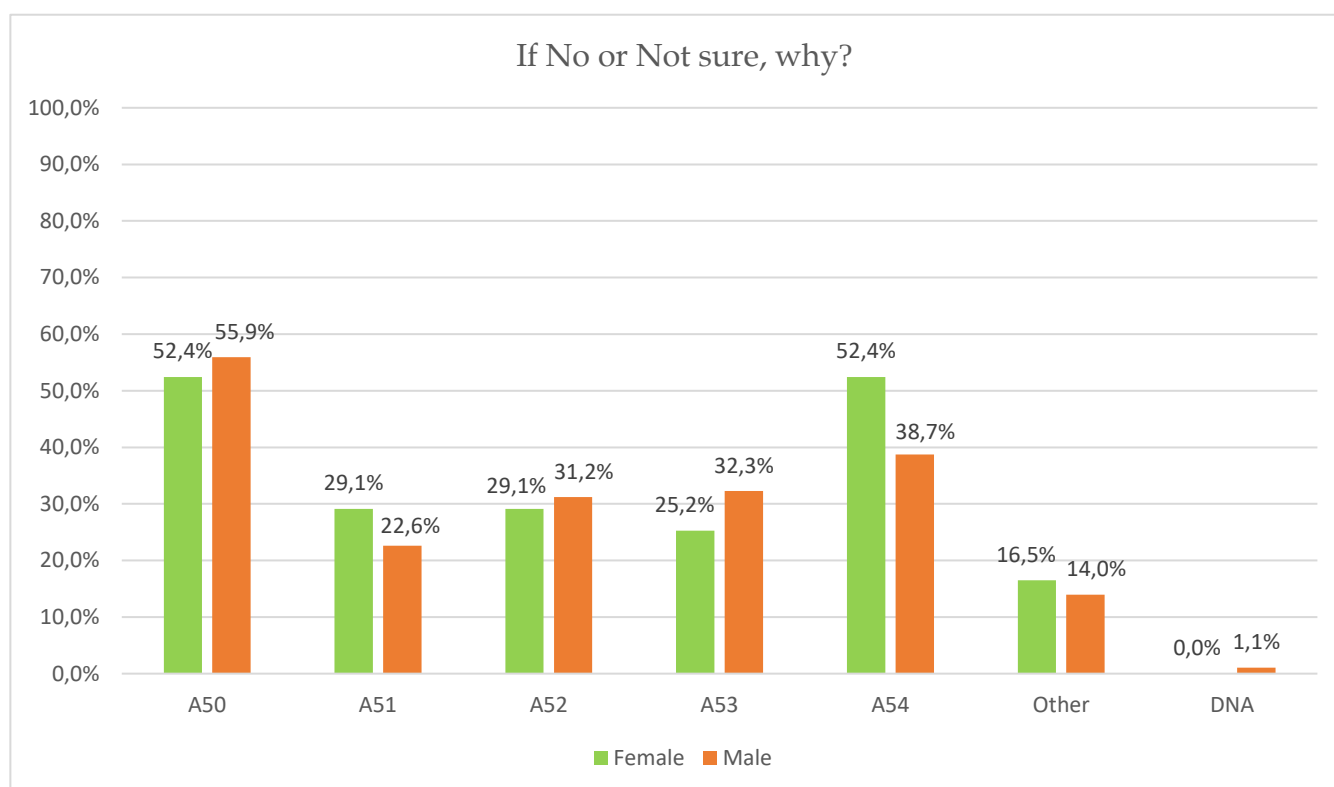
A45 I want to learn more about extinctions

A46 I like dinosaurs

A47 I like fossils

A48 I think learning about the past is fascinating

Graphic 83 showcases the subset of students who replied positively to question 10 of the Broader Society Life Sphere, amounting 1 girl and 8 boys. The only girl in this Life Sphere selected all the options, which means all the answers account for 100%. As for boys, the most predominant answer (100%) is liking fossils, and the second most common answer (87.5%) is liking dinosaurs. Additionally, 75% of boys like palaeontology because they can learn more about extinctions, and 62.5% express a desire to know more about extinct animals and plants, with 50 % finding that learning about the past is fascinating.



Graphic 84: Representation of the answers to question number twelve of the Life Sphere Broader Society in 8th Class Portuguese students.

Description

A50: I have never thought about it

A51: I am not interested in planet Earth's past

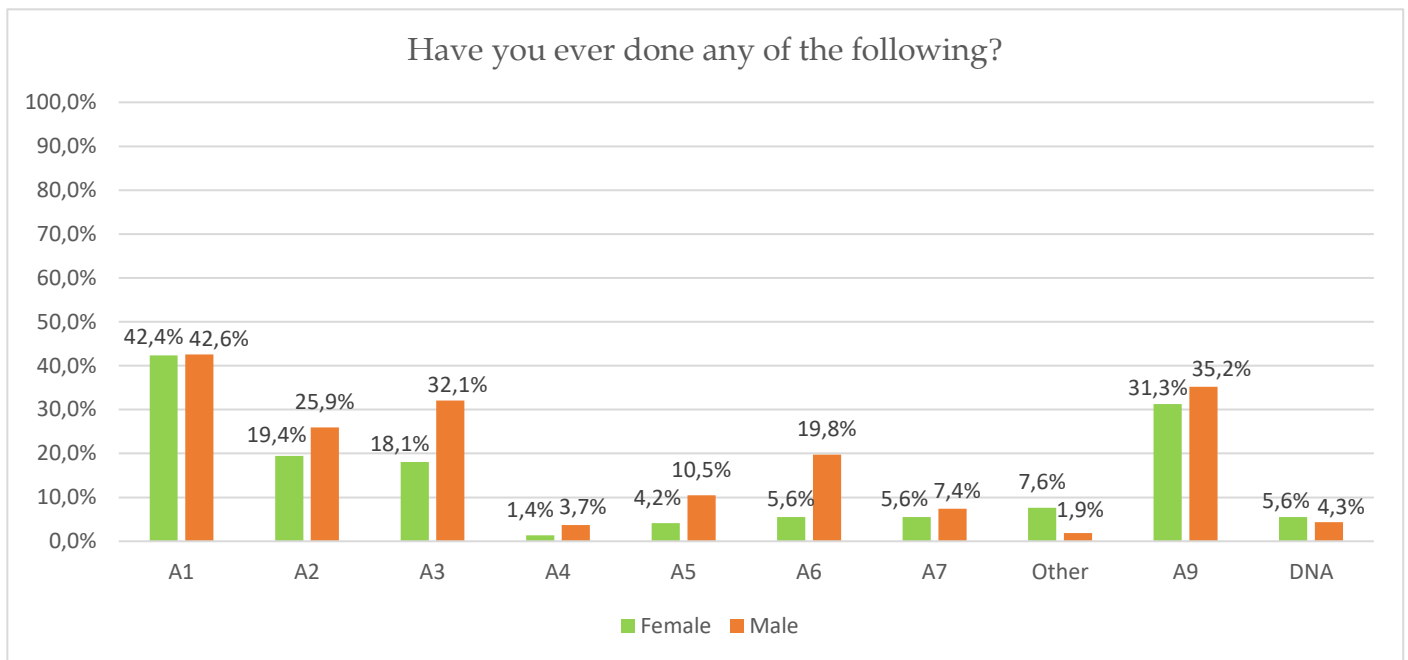
A52: It's boring

A53: It's too hard

A54: I don't like the subjects

DNA Did Not Answer

For graphic 84, it was considered the total number of students who replied "No" or "Not sure" to question 10; this includes 103 girls and 93 boys. The primary reason cited for both genders (52.4% of girls and 55.9% of boys) for not aspiring to become palaeontologists is that they have never thought about it. Among girls, the same percentage also goes to disliking the subject. Girls also express that it is hard and boring (29.1%) compared to 32.3% and 31.2% of boys, respectively. Additionally, 29.1% of female and 22.6% of male students express a lack of interest in planet Earth's past, with 16.5% of girls selecting the option "Other", citing religion and a lack of fascination with fossils. Both genders also indicate that they do not intend to pursue a career as a palaeontologist in the future because it is not an area of interest, and they already have other plans in mind.



Graphic 85: Representation of the answers to question number one of the Life Sphere Broader Society in 9th Class Portuguese students.

Description

A1 Watch a TV programme or documentary about palaeontology

A2 Watch a YouTube video about palaeontology

A3 Watch a film about palaeontology

A4 Listened to a podcast about palaeontology

A5 Listened to someone talk about palaeontology on the radio

A6 Used apps or games on your phone, tablet and/or computer about palaeontology

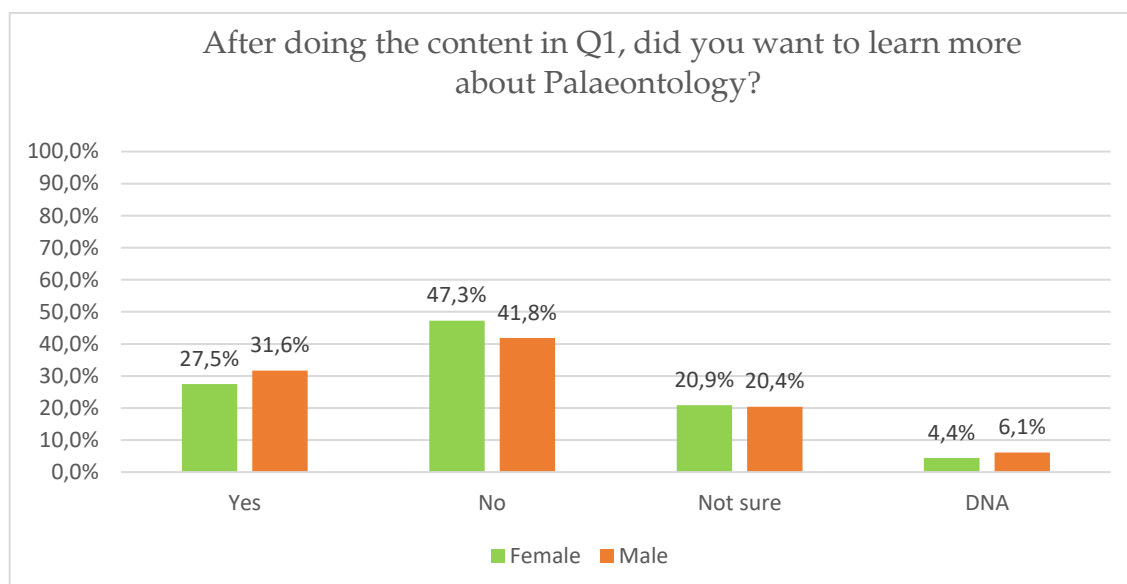
A7 Watch someone give a talk about palaeontology

A9 None of the above

DNA Did Not Answer

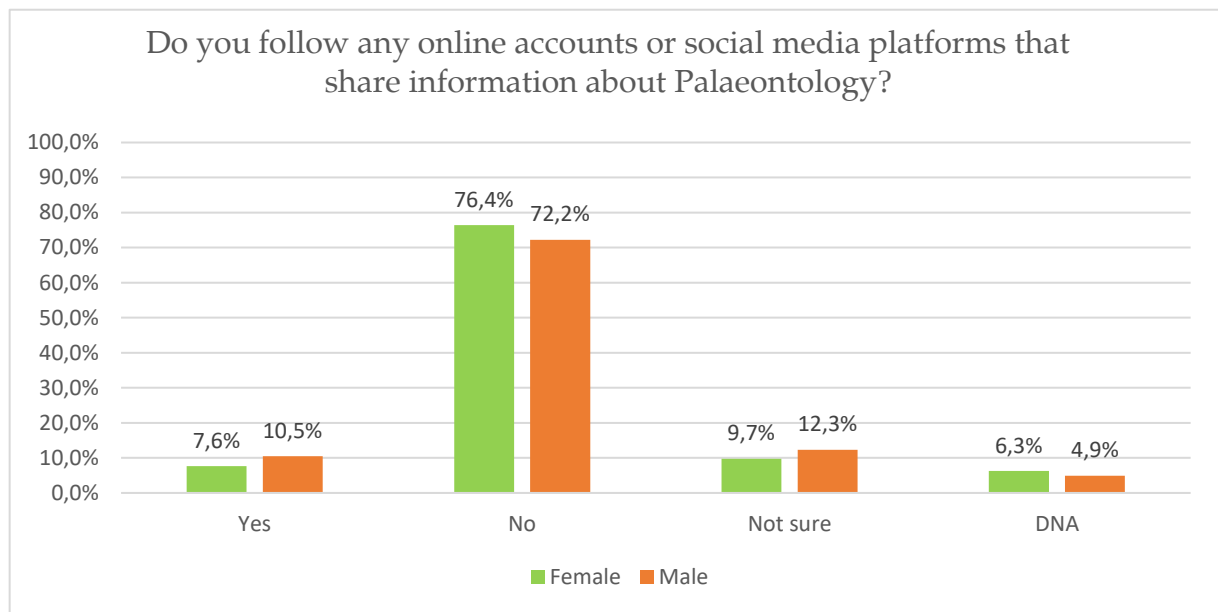
Graphic 85 represents the total sample of 9th class female and male students, comprising 144 girls and 162 boys. The percentage of students who reported never participating in any activity related to palaeontology is 31.3% for girls and 35.2% for boys. Among those who did, the most common activity for both genders (42.4% of girls and 42.6% of boys) was watching a television programme or documentary. Watching a film is also common for boys 32.1%, similar to watching a YouTube video about palaeontology at 25.9%, while for girls, that is the second most predominant answer (19.4%), followed by watching a film (18.1%). Less commonly chosen activities include listening to a podcast, with only 1.4% of girls and 3.7% of boys selecting this answer and watching someone give a talk about palaeontology, chosen by 5.6% of girls and 7.4% of boys. Notably, 7.6% of girls selected the option "Other", adding reading books,

watching videos and series and TikToks, as well as going to the beach to look for fossils, while 1.9% of boys added watching subjects on palaeontology on the news and visiting “places” with fossils. Both genders also added visiting museums and some activities that they could not remember.



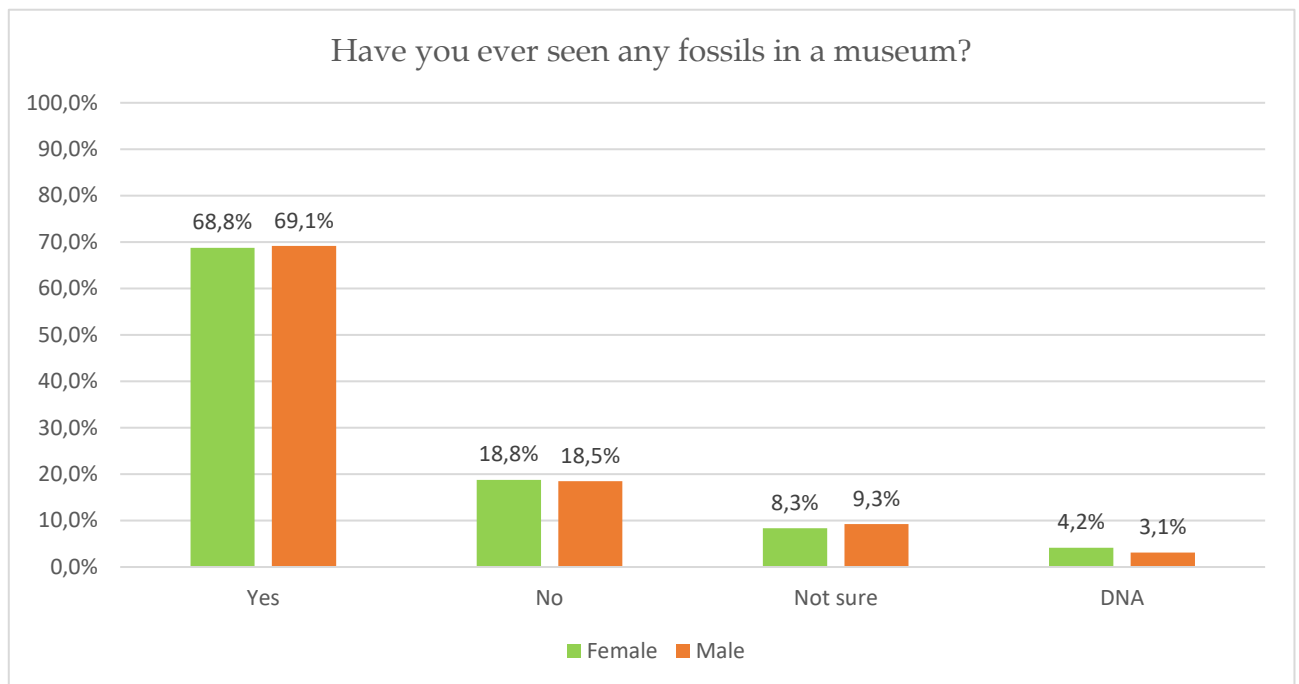
Graphic 86: Representation of the answers to question number two of the Life Sphere Broader Society in 9th Class Portuguese students.

For graphic 86, the sample comprises students who responded to question 1 consisting of those who have participated in activities related to palaeontology, totalling 91 girls and 98 boys. Notably, the most predominant answer is “No”, with 47.3% of girls and 41.8% of boys. Also, 27.5 % of girls and 31.6% of boys expressed that they have learned something new when participating in palaeontologic activities, and 20.9% of girls and 20.4% of boys expressed uncertainty.



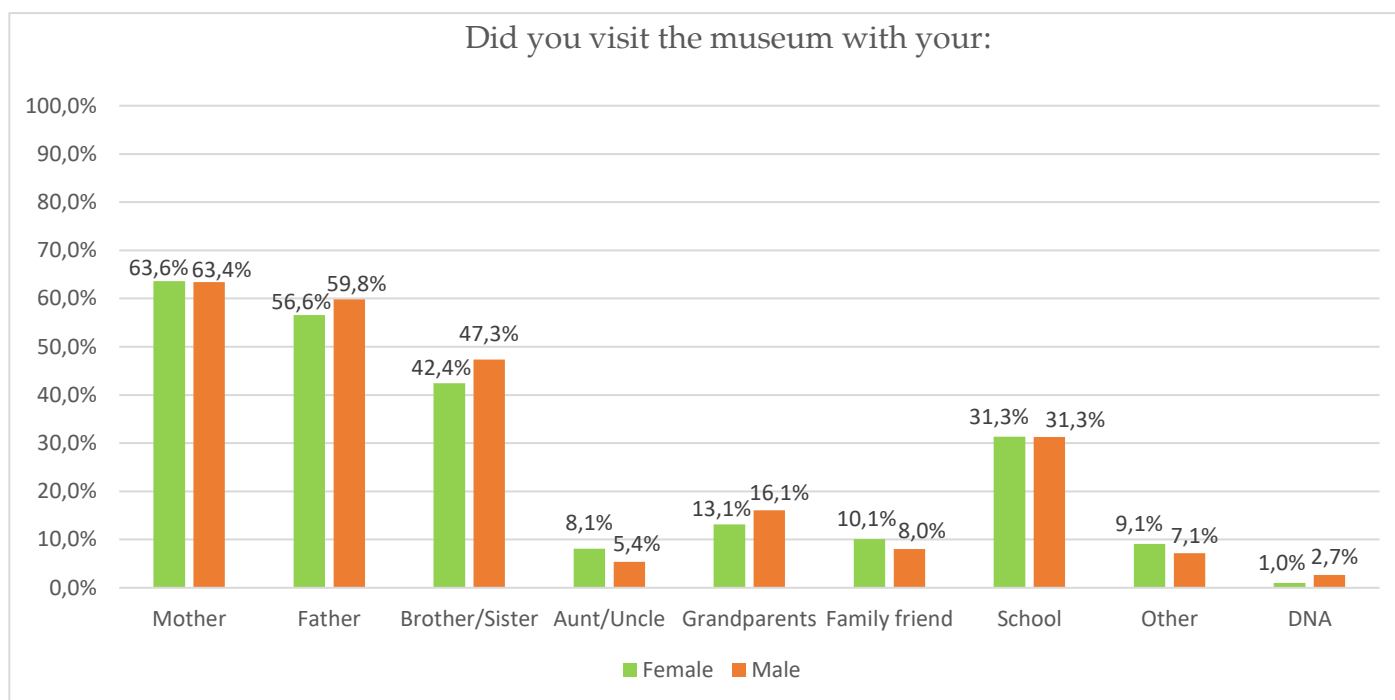
Graphic 87: Representation of the answers to question number three of the Life Sphere Broader Society in 9th Class Portuguese students.

Graphic 87 represents the total sample of 9th class female and male students, comprising 144 girls and 162 boys. The response with the biggest percentage for both genders is “No” (76.4% of girls and 72.2% of boys). Only 7.6% of girls and 10.5% of boys indicate that they follow online accounts or social media pages about palaeontology, while 9.7% of girls and 12.3% of boys express uncertainty.



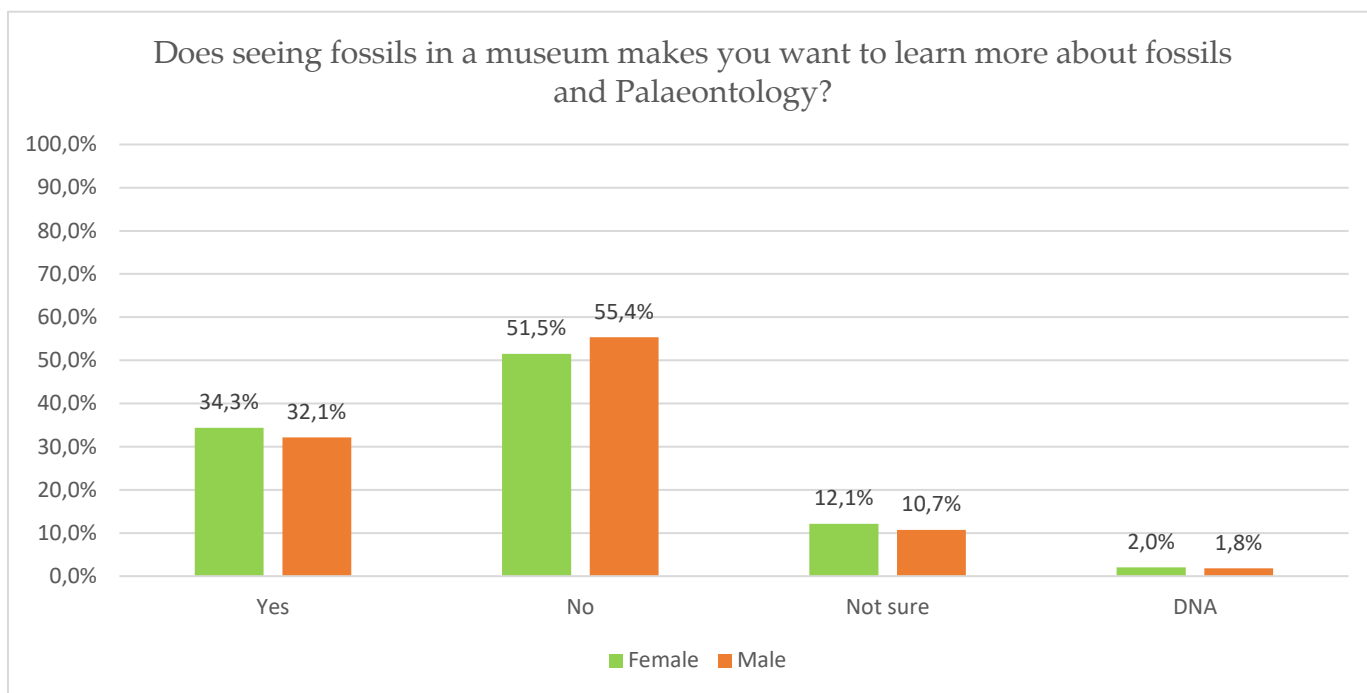
Graphic 88: Representation of the answers to question number four of the Life Sphere Broader Society in 9th Class Portuguese students.

Graphic 88 displays the overall number of students who participated in the surveys: 144 girls and 162 boys. The predominant response among female and male students when asked if they have ever seen fossils in a museum is “Yes,” with 68.8% of girls and 69.1% of boys. A smaller percentage, 18.8% of girls and 18.5% of boys stated that they had never seen fossils exposed in a museum, while 8.3% of girls and 9.3% of boys expressed uncertainty.



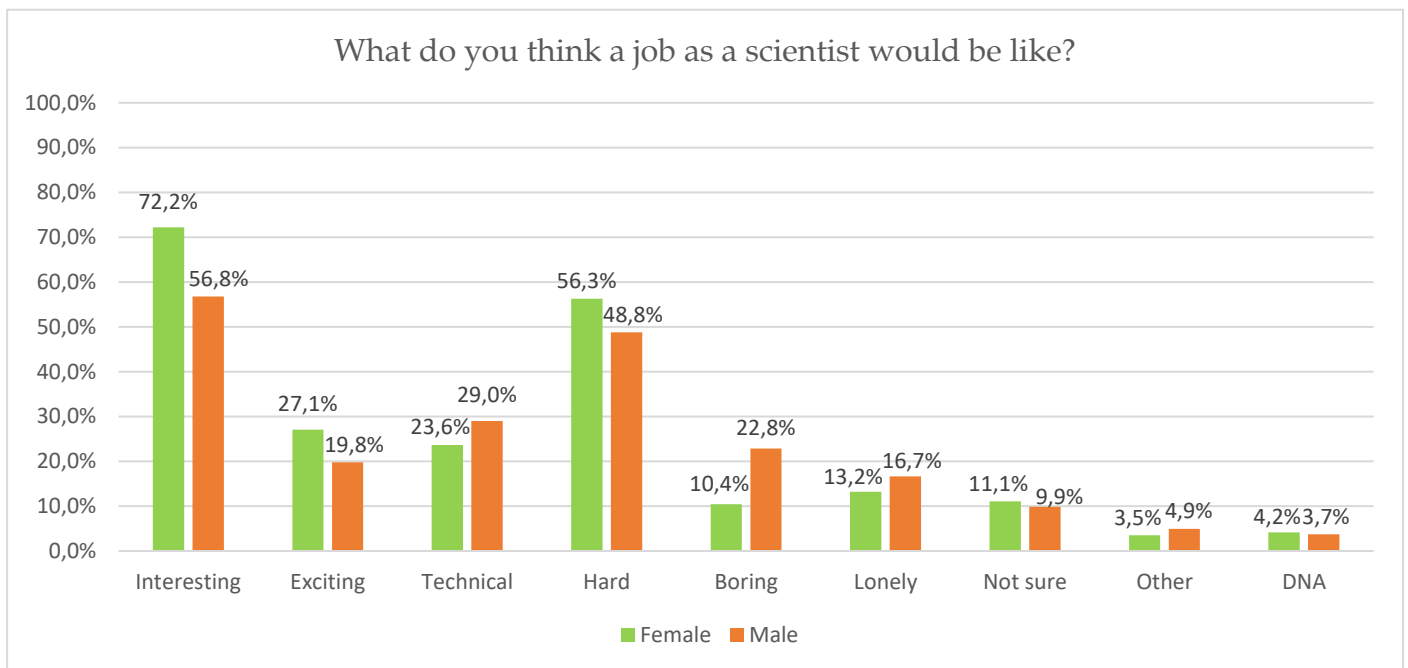
Graphic 89: Representation of the answers to question number five of the Life Sphere Broader Society in 9th Class Portuguese students.

For graphic 89, the sample of students consisted of those who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 99 girls and 112 boys. The most predominant answer regarding who students visited the museum with, is mother (63.6% for girls and 63.4% for boys), followed by father (56.6% of girls and 59.8% of boys) and siblings (42.4% of girls and 47.3% of boys) selecting this option. The option school also has a significant percentage, with 31.3% of girls and boys. Grandparents account for 13.1% of the responses for girls and 16.1% for boys. Additionally, 9.1% of girls and 7.1% of boys selected the option “Other”, adding cousins, friends, summer camp and stepmother. Boys also added scouts and nephew.



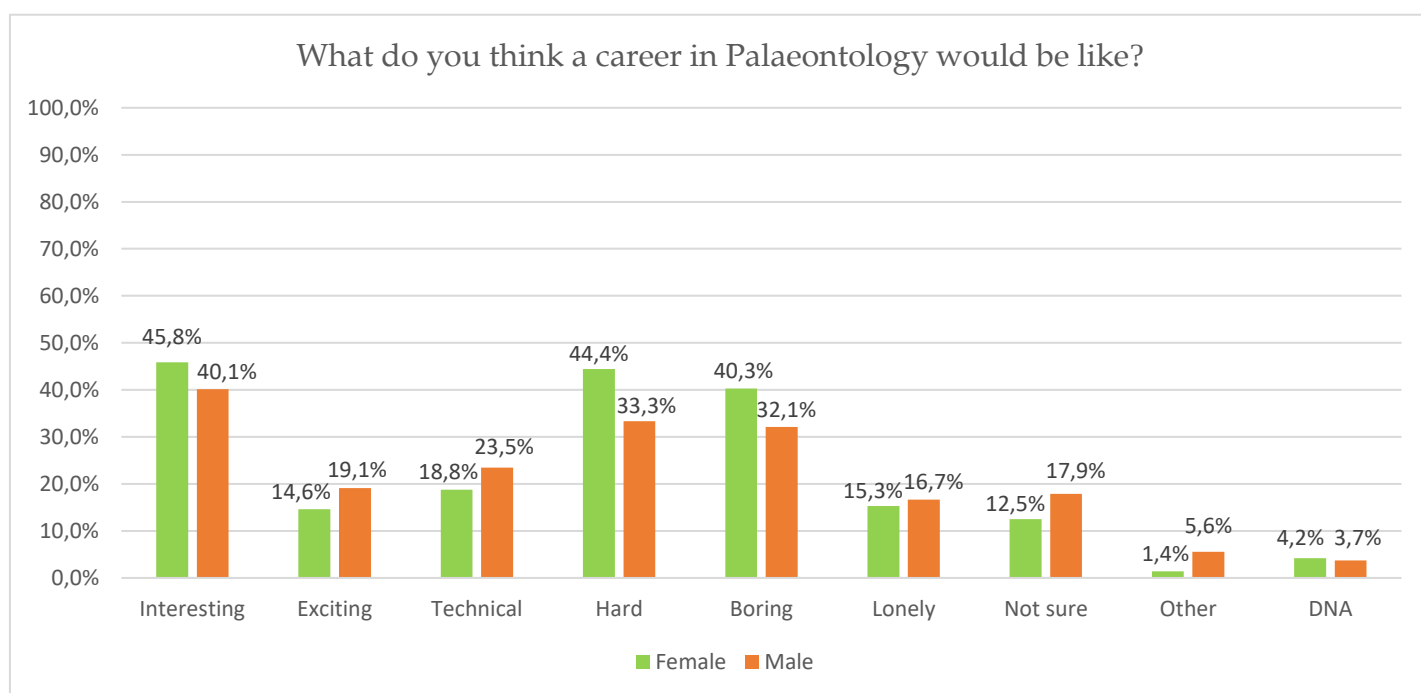
Graphic 90: Representation of the answers to question number six of the Life Sphere Broader Society in 9th Class Portuguese students.

Graphic 90 displays the sample of students who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 99 girls and 112 boys. When asked if seeing fossils in a museum made them want to learn more about the subject, the predominant response for both genders is “No”, with 51.5% of girls and 55.4% of boys, followed by “Yes”, with 34.3% of girls and 32.1% of boys. Furthermore, 12.1% of girls and 10.7% of boys remained unsure.



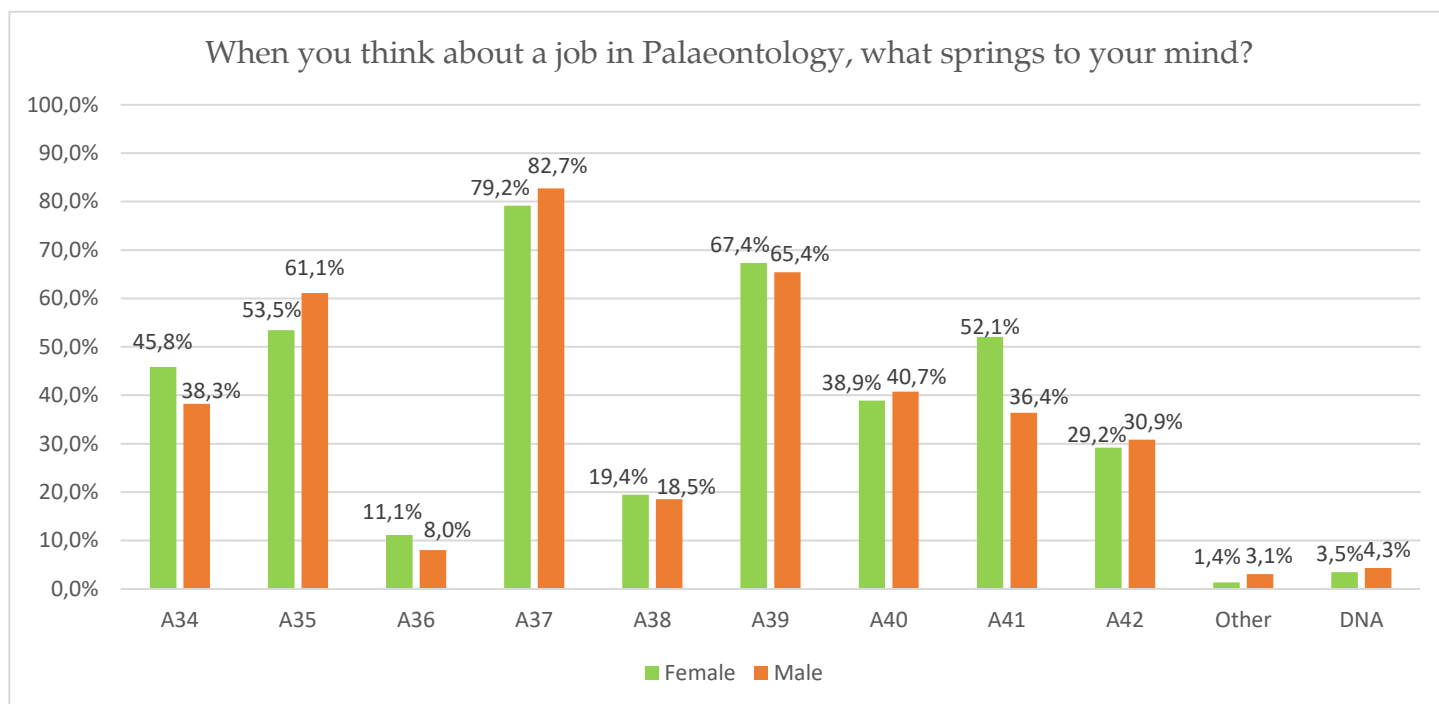
Graphic 91: Representation of the answers to question number seven of the Life Sphere Broader Society in 9th Class Portuguese students.

Graphic 91 displays the overall count of students who participated in the surveys: 144 girls and 112 boys. When asked if students knew what a job as a scientist would be like, the most predominant response was interesting, with 72.2% of girls and 56.8% of boys selecting this answer. Hard is the second most preferred option, with 56.3% of girls and 48.8% of boys selecting it. For 27.1% of girls, a job as a scientist is exciting compared with 19.8% of boys, and technical for 23.6% of girls and 29% of boys. A smaller percentage of students (10.4% of girls and 22.8% of boys) think it's boring, while 13.2% of female and 16.7% of male students think it's lonely. Furthermore, 3.5% of girls selected the option "Other", citing that the job could be fun, motivating, and fascinating, with 4.9% of boys adding demanding, happy, complicated, and depressing. Both genders also added tiring.



Graphic 92: Representation of the answers to question number eight of the Life Sphere Broader Society in 9th Class Portuguese students.

Graphic 92 illustrated the total number of students who participated in the surveys: 144 girls and 162 boys. When asked about what a job as a palaeontologist would be like, the most selected answer by both genders is interesting (45.8% of girls and 40.1% of boys), followed by hard with 44.4% of girls and 33.3% of boys and boring (40.3% of girls and 32.1% of boys). Additionally, 18.8% of girls and 23.5% of boys expressed that it's a technical job, while 14.6% of girls and 19.1% of boys say it is exciting. Furthermore, 15.3% of girls and 16.7% of boys say it's a lonely job. Both genders selected the option "Other", with 1.4% of girls adding that it is a careful and bad job and 5.6% of boys citing tiring, different, sad, happy, bad and adventurous.



Graphic 93: Representation of the answers to question number nine of the Life Sphere Broader Society in 9th Class Portuguese students.

Description

A34 Working in a lab a lot

A35 Going on field trips a lot

A36 Meetings all-day

A37 Excavating and preparing fossils

A38 Work alone

A39 Work with a team

A40 Drawing dinosaurs and other extinct animals

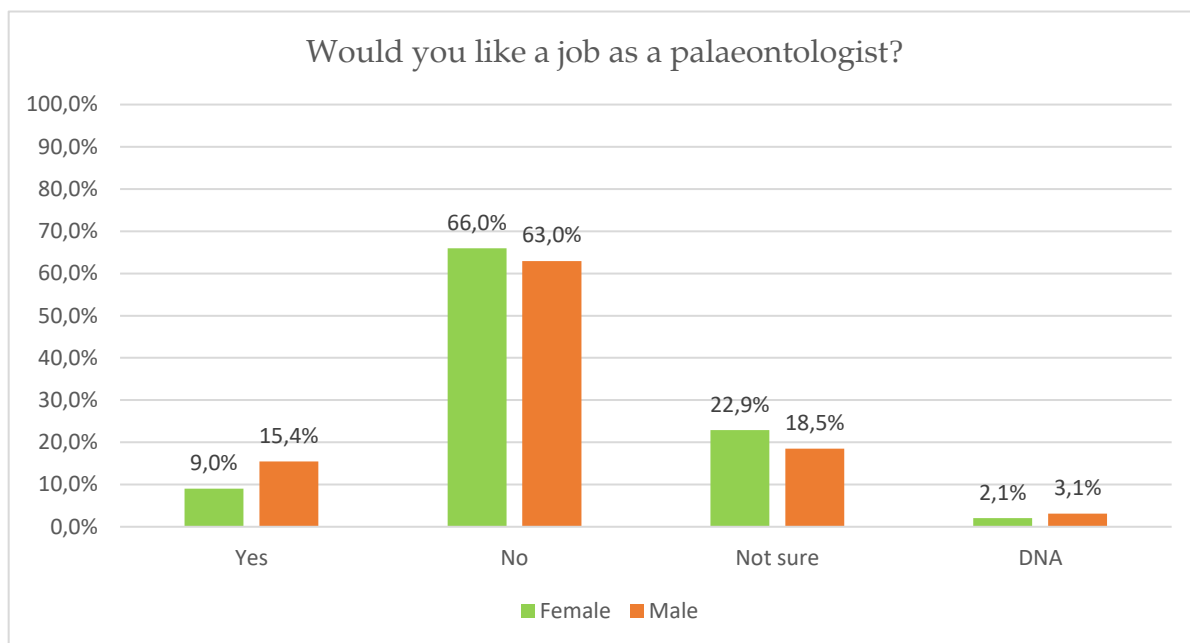
A41 Giving lectures and talks

A42 Working in a museum

DNA: Did Not Answer

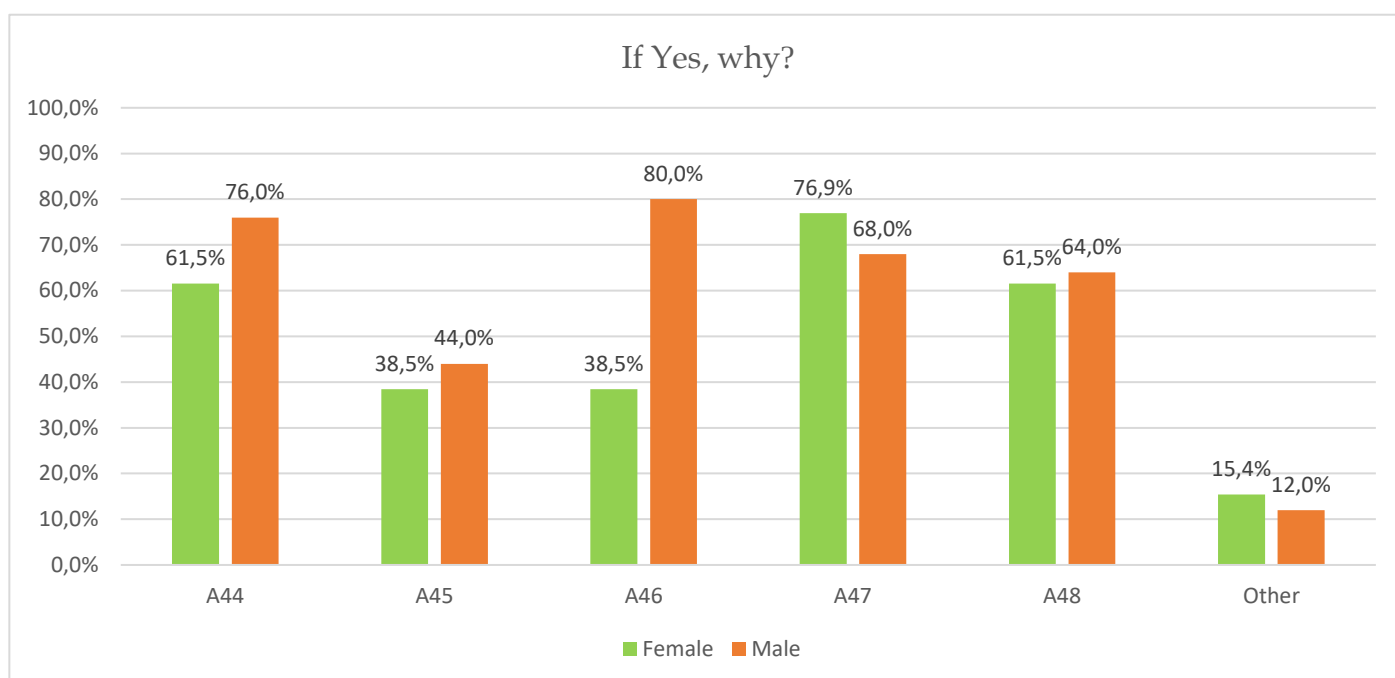
Graphic 93 displays the overall count of students who participated in the surveys: 144 girls and 162 boys. The most common response when asking students what they think palaeontologists do, is excavating and preparing fossils, with 79.2% of girls and 82.7% of boys selecting this answer, followed by working in a team (67.4% for girls and 65.4% for boys). Going on field trips is also a common response (53.5% of girls and 61.1% of boys). Another standard answer is working in a laboratory, with 45.8% of girls and 38.3% of boys selecting this. Notably, giving lectures and talks as also part of a palaeontologist's work was selected by 52.1% of girls and 36.4% of boys, followed by drawing dinosaurs and other extinct animals with 38.9% of girls and 40.7% of boys. Some other less common responses are having meetings all day (11.1% of girls and 8% of boys) and working alone (19.4% of girls and 18.5% of boys). Both genders selected the option "Other", with 1.4% of girls adding that the type of jobs will depend on the type of palaeontologist. In comparison, 3.1% of boys say that they probably spend a lot of time

on the computer, finding new dinosaurs and exploring the world. Some female and male students expressed that they did not know the answer to this question.



Graphic 94: Representation of the answers to question number ten of the Life Sphere Broader Society in 9th Class Portuguese students.

Graphic 94 displays the total sample of students who replied to the surveys, totalling 144 girls and 162 boys. The predominant response when asked if they would like a job as a palaeontologist for both genders is “No,” with 66% of girls and 63% of boys, followed by “Not sure,” with 22.9% of girls and 18.5% of boys expressing uncertainty. Only 9% of girls and 15.4% of boys selected having an interest in a job in palaeontology.



Graphic 95: Representation of the answers to question number eleven of the Life Sphere Broader Society in 9th Class Portuguese students.

Description

A44 I want to learn more about extinct animals and plants

A45 I want to learn more about extinctions

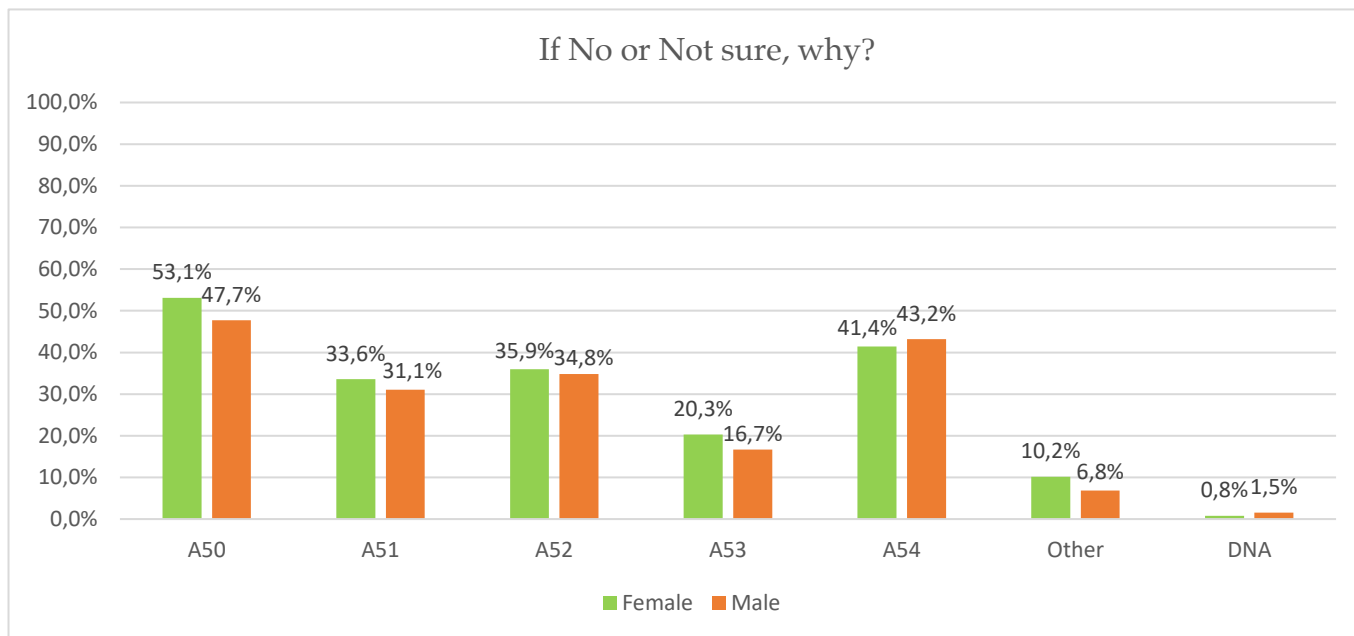
A46 I like dinosaurs

A47 I like fossils

A48 I think learning about the past is fascinating

Graphic 95 showcases the subset of students who replied positively to question 10 of the Broader Society Life Sphere, amounting 13 girls and 25 boys. For girls, the most common answer, 76.9%, is liking fossils, followed by thinking that learning about the past is fascinating and wanting to learn more about extinct animals and plants, both answers at 61.5%. A smaller percentage of girls, 38.5%, would like a job in palaeontology because they want to learn more about extinctions and because they like dinosaurs. As for boys, the most predominant answer (80%) is liking dinosaurs, with wanting to learn about extinct animals and plants being the second most popular answer with 76%, followed by liking fossils with 68% and liking to learn about the past because it is fascinating (64%). The least common option, with 44%, is wanting to learn about extinctions. Additionally, 15.4% of girls and 12% of boys selected the option “Other”, citing they would like to pursue a career in palaeontology because they like to learn

more about ancient animals, with girls also adding the fact that it mixes history with science, and boys adding “They are amazing”.



Graphic 96: Representation of the answers to question number twelve of the Life Sphere Broader Society in 9th Class Portuguese students.

Description

A50 I have never thought about it

A51 I am not interested in planet Earth's past

A52 It's boring

A53 It's too hard

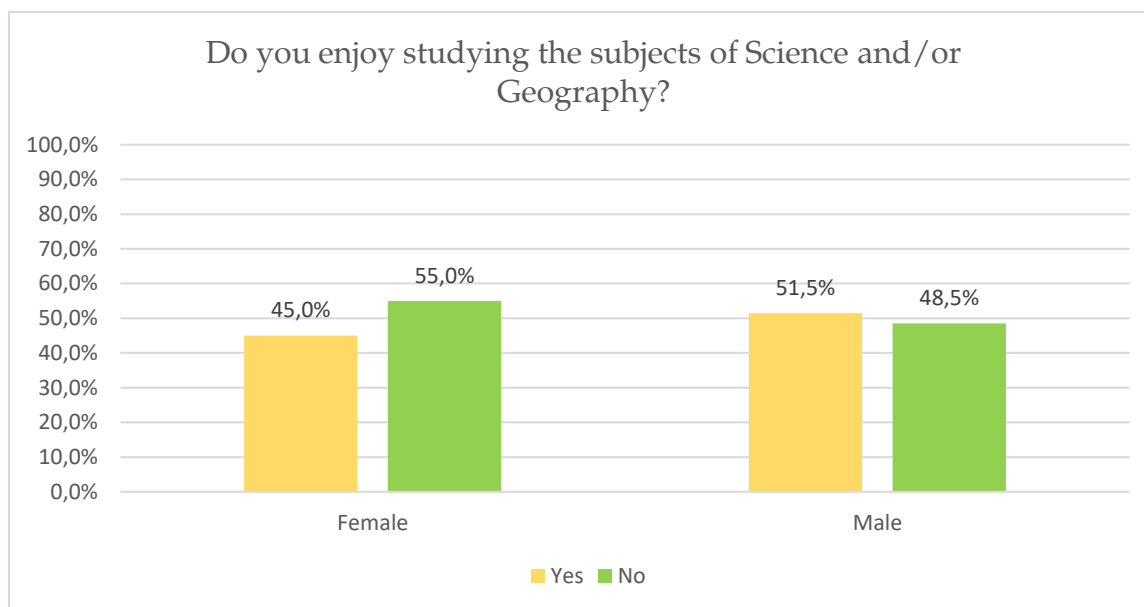
A54 I don't like the subjects

DNA: Did Not Answer

For graphic 96, it was considered the total number of students who replied “No” or “Not sure” to question 10; this includes 128 girls and 132 boys. The primary reason cited for both genders (53.1% of girls and 47.7% of boys) for not aspiring to become palaeontologists is that they have never considered it. The second most common answer is their dislike for the subject (41.4% of girls and 43.2% of boys), followed by the perception that it is a boring field (35.9% of girls and 34.8% of boys), with only a small percentage of girls (20.3%) and boys (16.7%) agree that it is a complicated subject. Both genders selected “Other” option (10.2% of girls and 6.8% of boys), mentioning a lack of interest in the subject and already having other plans in mind. Girls also added that they find it boring, that it's not a well-paid profession, and that it's not fascinating, while boys mentioned that they think there are more important things to learn and that there is a lack of a professional future in the field.

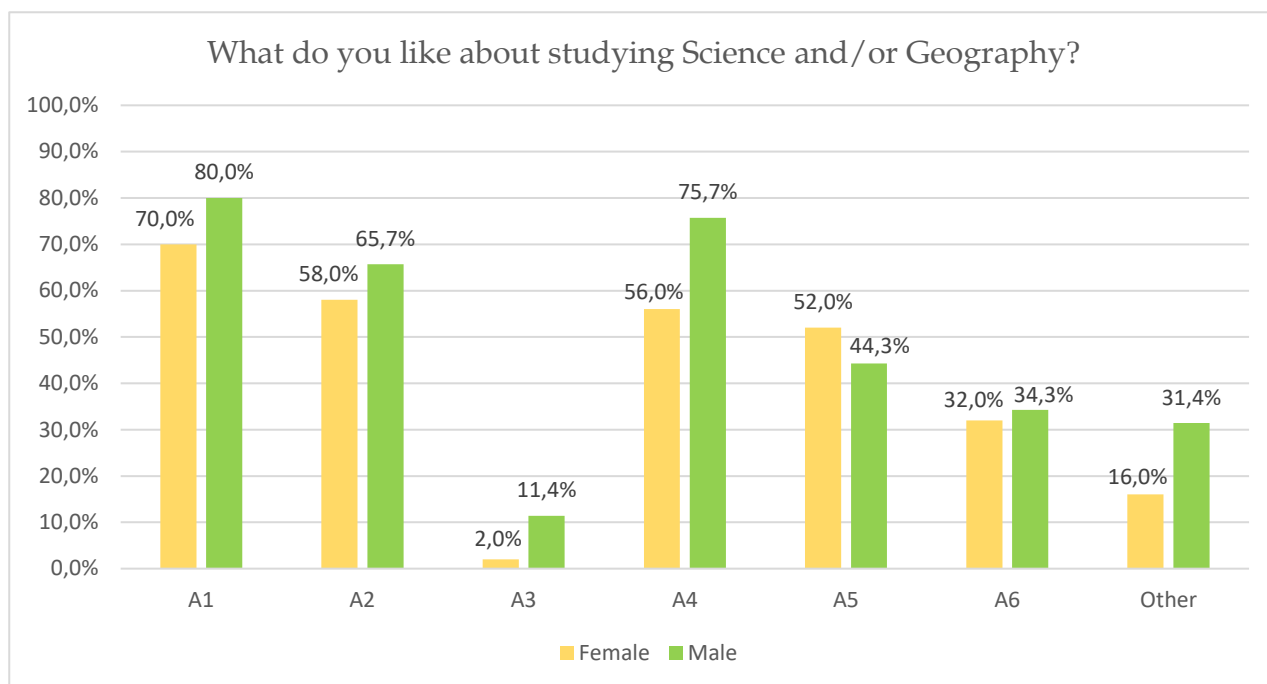
Annexe VII - Graphics from survey results: Ireland Life Sphere School

1st YEAR



Graphic 97: Representation of the answers to question number two of the Life Sphere School in 1st year Irish students.

The graphic above represents the sample of first-year female and male students, comprising 111 girls and 137 boys; however, due to one invalid answer, only 136 boys were considered. Over 50% of girls say they did not enjoy studying Science and/or Geography, compared with 48.5% of boys. Most boys (51.5%) and 45% of girls indicated that they enjoy studying the subjects mentioned.



Graphic 98: Representation of the answers to question number three of the Life Sphere School in 1st year Irish students.

Description

A1 It's interesting

A2 I like the teacher

A3 I like the textbooks

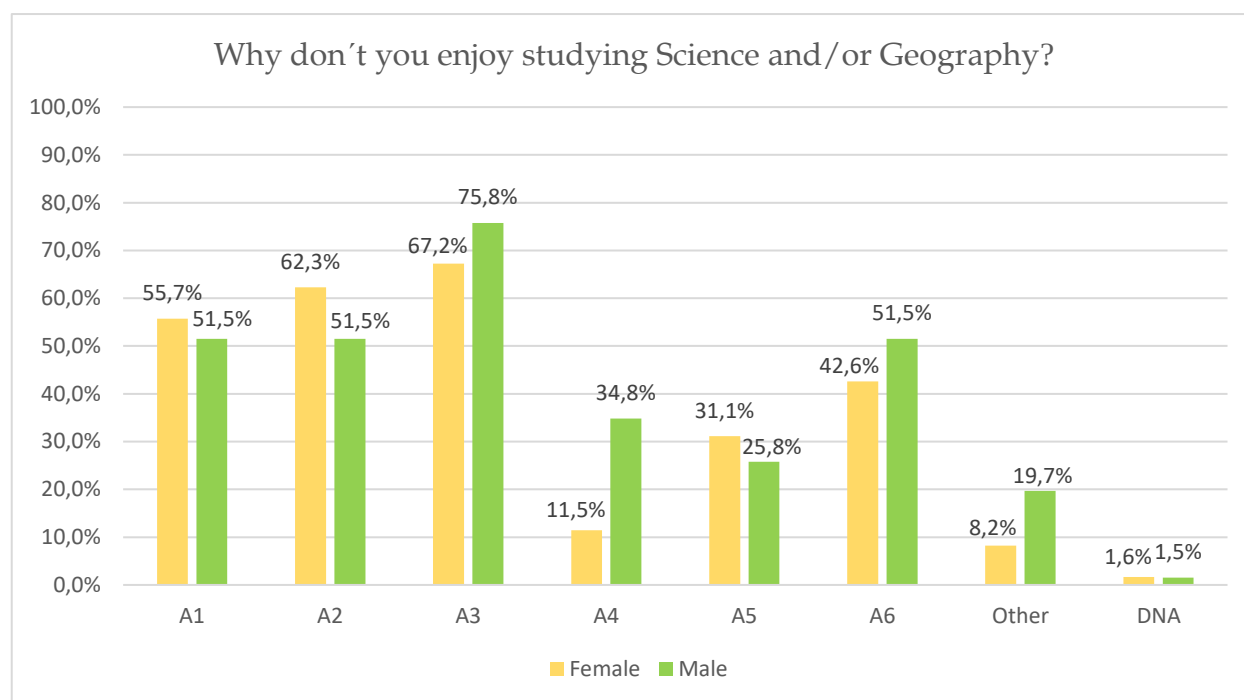
A4 I like to do experiments in the labs

A5 I like learning about how the world works

A6 I like to be able to connect what I learn in class with real life outside school

Graphic 98 includes the number of students who replied “Yes” to question 2; these include 50 girls and 70 boys. Predominantly, the most common reasons both genders cite for enjoying Science/Geography are answers 1, 2 and 4, with over 50% of both genders selecting these options. This indicated an interest in the subject (70% of girls and 80% of boys), liking the teacher (58% of girls and 65.7% of boys), and experiences in the laboratory (56% for girls and 75.7% for boys) are the most significant factors contributing to their enjoyment of the subjects. Additionally, over half of the girls (52%) enjoy it because they learn how the world works, a sentiment shared with 44.3% of boys. Furthermore, 34.3% of boys say they enjoy the subject of Geography/Science because they can connect what they learn in class with the world outside, the same as 32% of girls. A smaller proportion of students (2% of girls and 11.4% of boys) say they like the textbooks, and 31.4% of boys selected “Other”, expressing interest in subjects like biology, geology, rivers, oceanography, physics and topics with significant real-world

relevance. In addition, 16% of girls reported enjoying studies about life beyond Earth, the animal kingdom and brain function. Both genders also mentioned vulcanology, Earth Sciences, the human body, astronomy and exploring new topics as factors that enhance their enjoyment of Geography and Science.



Graphic 99: Representation of the answers to question number four of the Life Sphere School in 1st year Irish students.

Description

A1 It's hard

A2 It's confusing

A3 It's boring

A4 I don't see it as something important to learn

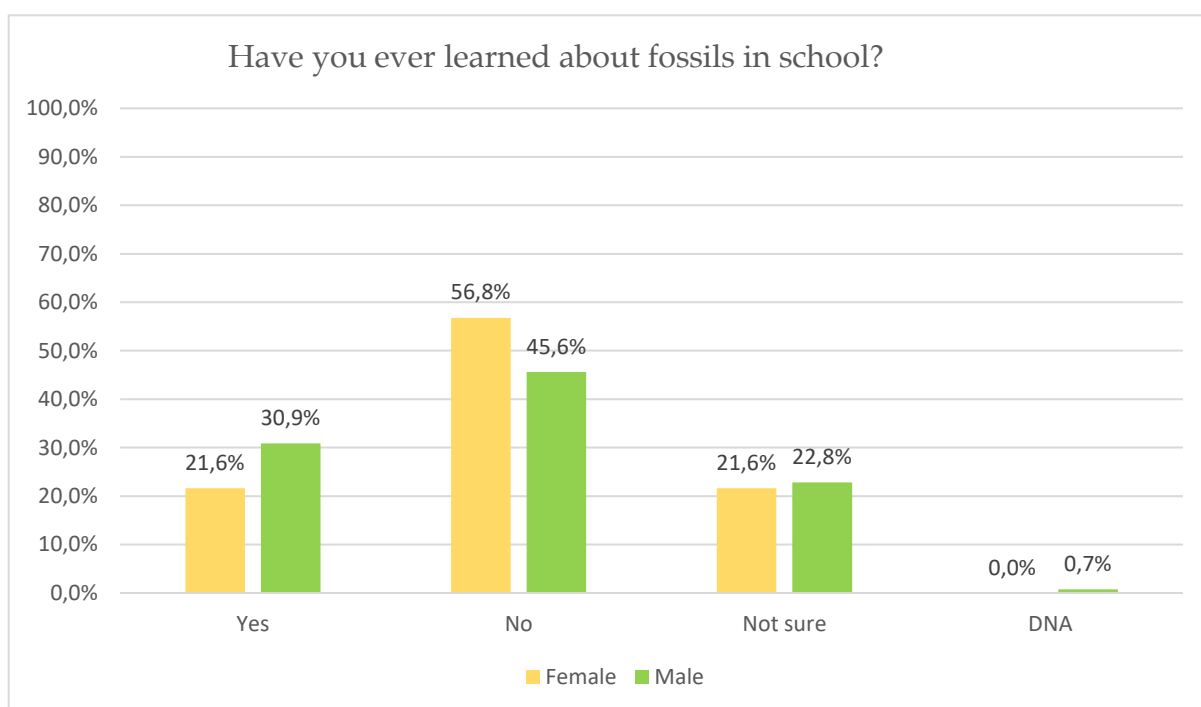
A5 There are not enough field trips

A6 I feel there is too much information

DNA: Did Not Answer

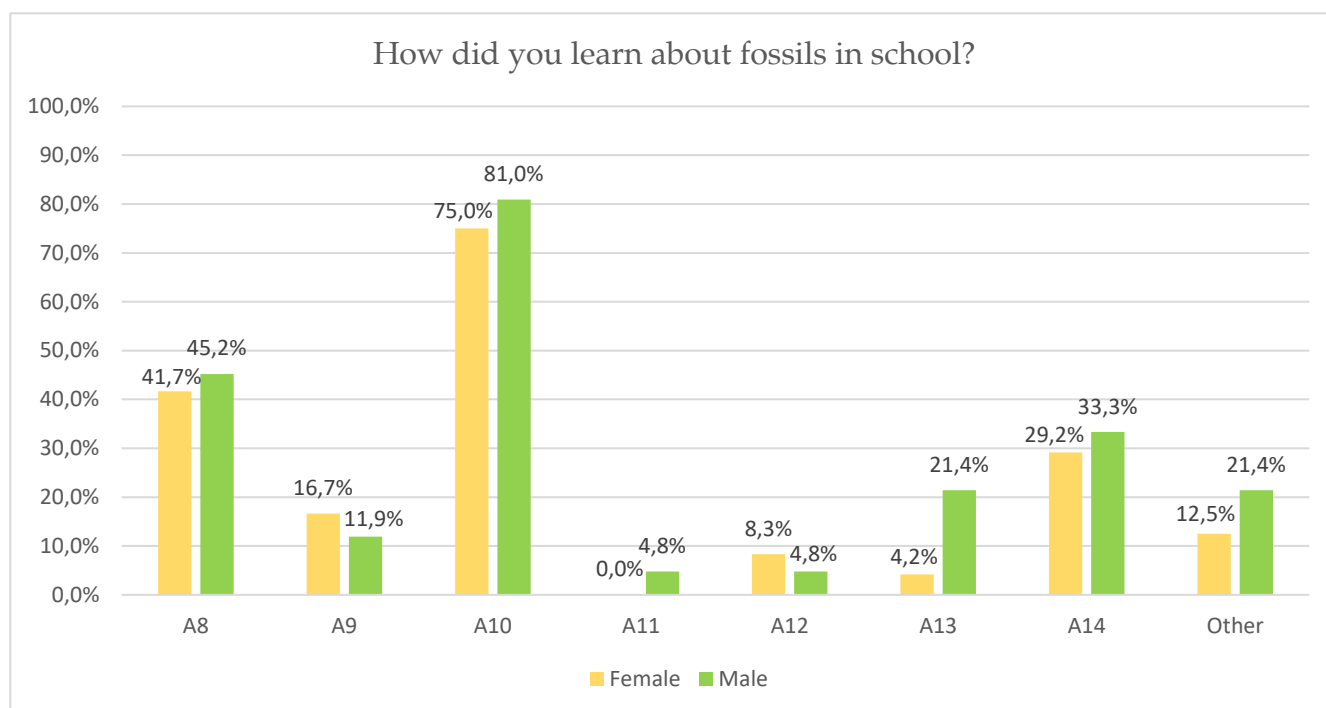
Graphic 99 includes the number of students who replied "No" to question 2, comprising 61 girls and 66 boys. The graphic shows a similar significance on answers 1, 2, and 3, with the most selected option being number 3. This indicates that 67.2% of girls and 75.8% of boys do not enjoy studying Science and/or Geography because it's boring, followed by confusion, with 62.3% of girls and 51.5% of boys agreeing. More than half the students (55.7% of girls and 51.5% of boys) consider the subject hard. Also 51.5% of boys express feeling overwhelmed by the amount of information to learn compared with 42.6% of girls. Moreover, a smaller

percentage (11.5%) of girls agree that the subjects of Science and Geography are not essential to learn, compared to boys with a higher percentage (34.8%). In girls, 31.1% agree that there are insufficient field trips; for boys, this corresponds to 25.8%. Furthermore, 8.2% of girls and 19.7% of boys added “Other”, citing that they don’t like the subject because of dissatisfaction with the teacher, difficulty understanding the subjects and a perception that it has no future relevance in their lives. Additionally, some boys mentioned that they do not enjoy the subjects because they are overwhelming and require excessive study time.



Graphic 100: Representation of the answers to question number five of the Life Sphere School in 1st year Irish students.

For this graphic, the entire sample of students, consisting of 111 girls and 137 boys, was examined. However, due to 1 invalid question, only 136 boys were accounted for. To this question, 56.8% of female and 45.6% of male students answered “No”, representing the most considerable percentage. Additionally, 21.6% of girls and 30.9% of boys say that they have learned about fossils in the classroom, compared with a similar percentage of 21.6% of girls and 22.8% of boys showing uncertainty.



Graphic 101: Representation of the answers to question number six of the Life Sphere School in 1st year Irish students.

Description

A8 School books

A9 Other books (not a textbook)

A10 The teacher spoke about it in class

A11 A Palaeontologist visited my school and gave a talk

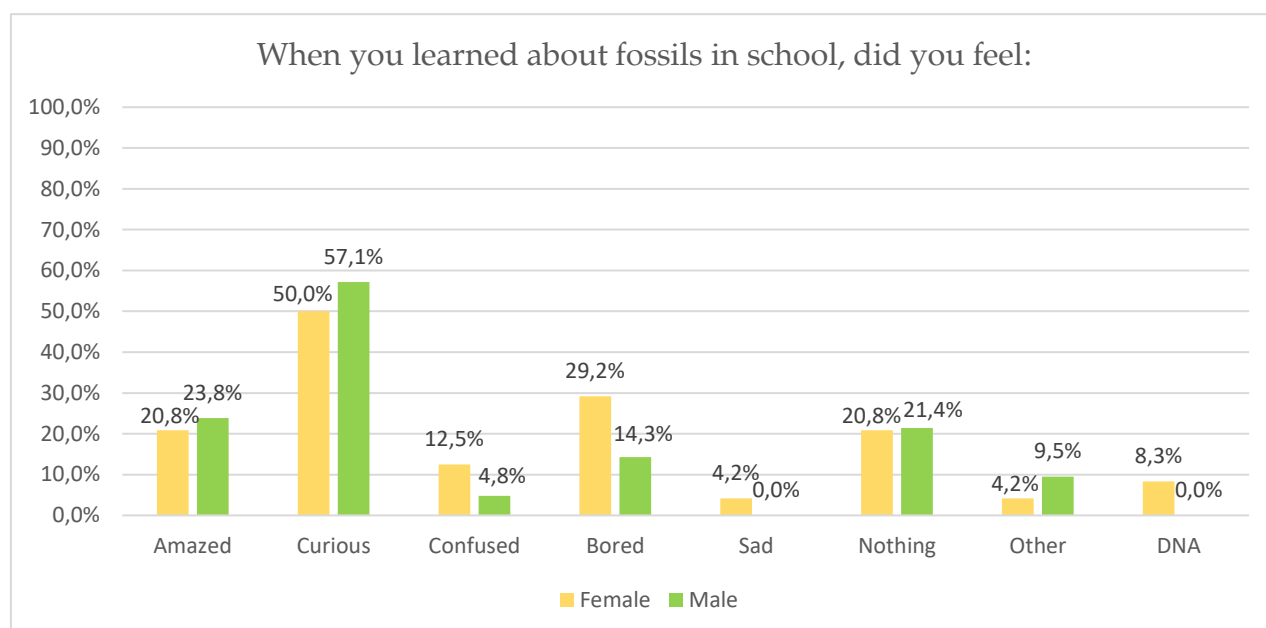
A12 Had a field trip to a museum or fossil site

A13 I looked at a website that had information about fossils

A14 Watch a video in school

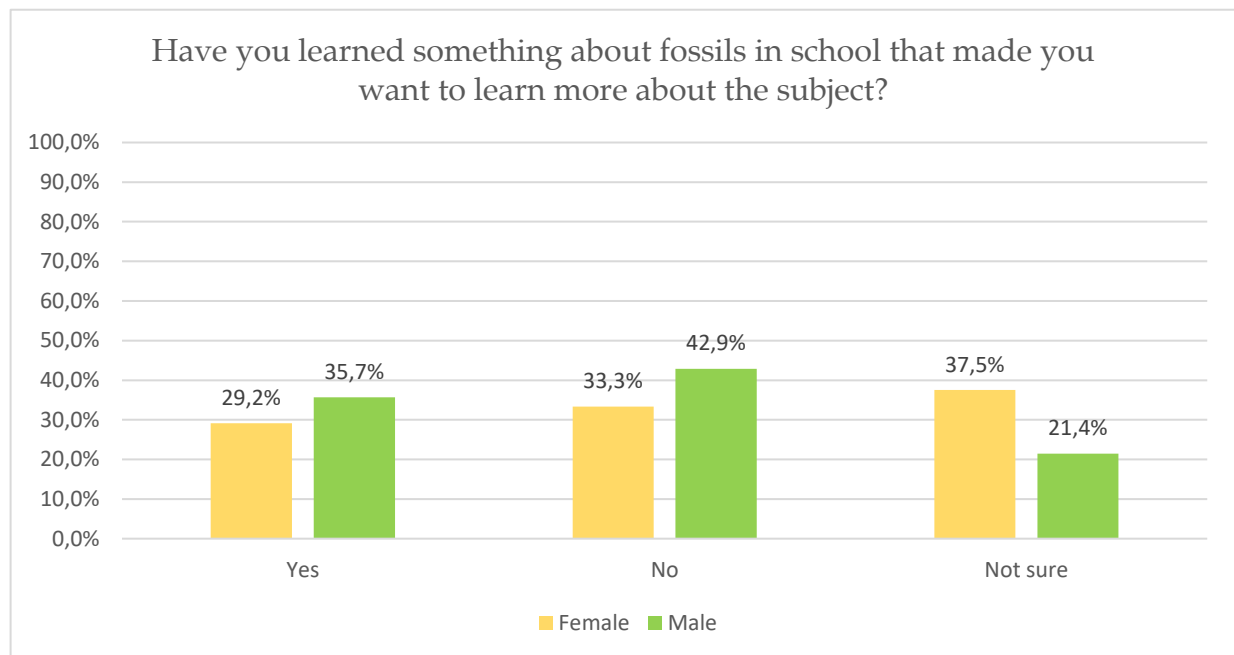
Graphic 101 exclusively includes responses from students who answered “Yes” to question 5, comprising 24 girls and 42 boys. Notably, for both genders, the most commonly chosen answer is number 10, discussed by the teacher in class, selected by 75% of girls and 81% of boys. Followed by school books with 41.7% of girls and 45.2% of boys. The third most prevalent response comes from over 29.2% of girls and 33.3% of the boys, who mentioned watching a video in school about fossils. Moreover, 12.5% of girls and 21.4% of boys selected “Other”, indicating learning about fossils through the television, the History teacher speaking about it in class,

and boys also adding reading books about the topic, analysing “Dinosaur adventure” and activities such as digging a hole in the beach looking for fossils.



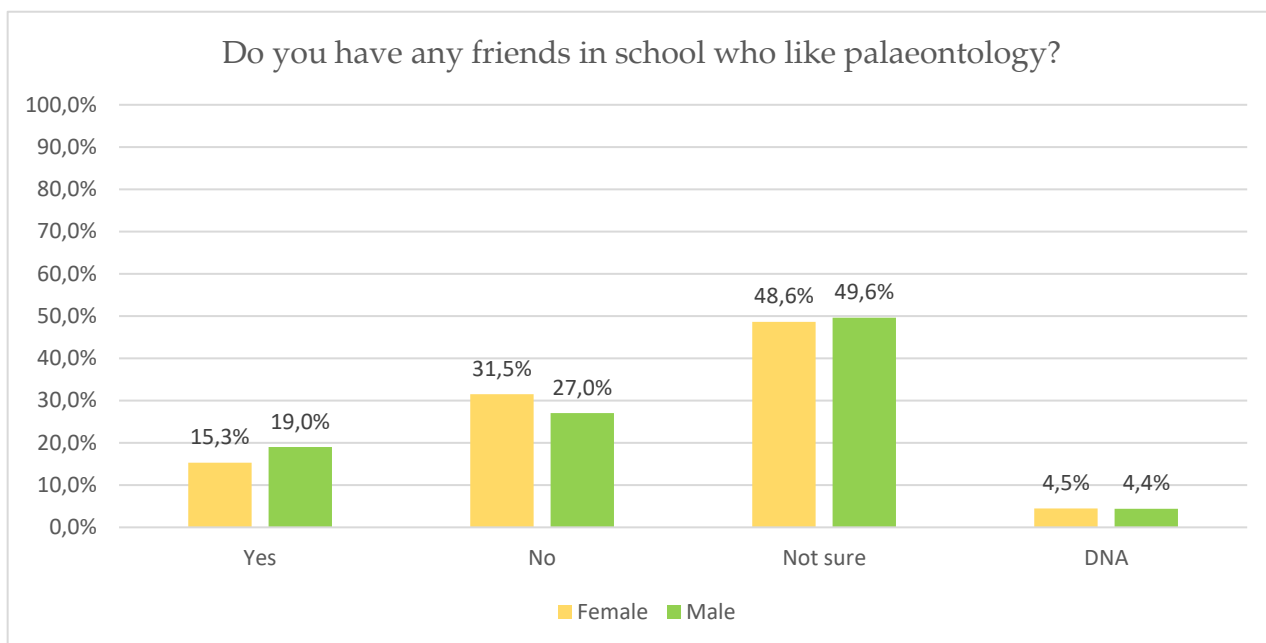
Graphic 102: Representation of the answers to question number seven of the Life Sphere School in 1st year Irish students.

For this visual representation, the sample of students was those who replied affirmatively to question 5, totalling 24 girls and 42 boys. When queried about their emotions upon learning about fossils in school, the predominant sentiment among both genders was Curiosity, with 50% of girls and 57.1% of boys expressing this feeling. Following curiosity, boys most commonly reported feeling Amazed (23.8%), whereas girls were likelier to feel Bored (29.2%). Boys' third most prevalent response was feeling Nothing (21.4%), the same for girls (20.8%), and a similar percentage for Amazed. Additionally, 4.2% of girls and 9.5% of boys replied “Other”, citing feelings such as happiness for girls and excitement, interest and sense of prior knowledge about the topic for boys.



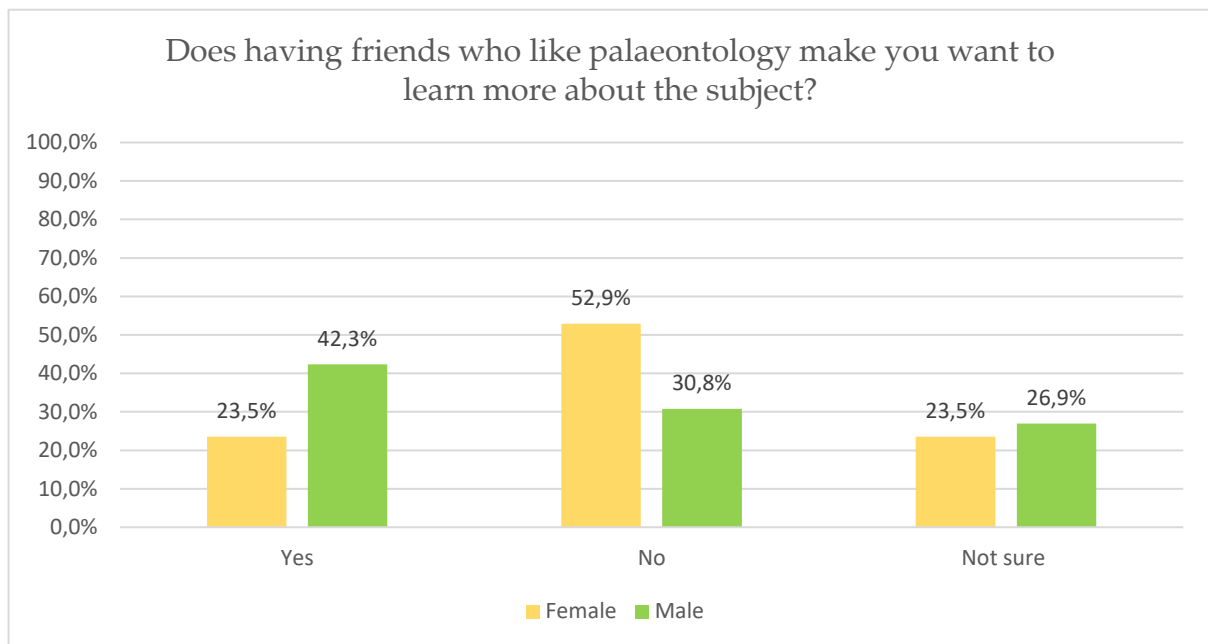
Graphic 103: Representation of the answers to question number eight of the Life Sphere School in 1st year Irish students.

Graphic 103 utilises data from the student sample who replied “Yes” to question 5. This includes 24 girls and 42 boys. When asked about finding an interest in fossils when studying the subject, 42.9% of boys and 33.3% of girls replied “No”. Additionally, the second biggest percentage of boys goes to an affirmative answer (35.7%) compared with 21.4% of male students who replied with uncertainty. For girls, it is the opposite, 37.5% of female students replied “Not sure” compared with only 29.2% who responded affirmatively.



Graphic 104: Representation of the answers to question number nine of the Life Sphere School in 1st year Irish students.

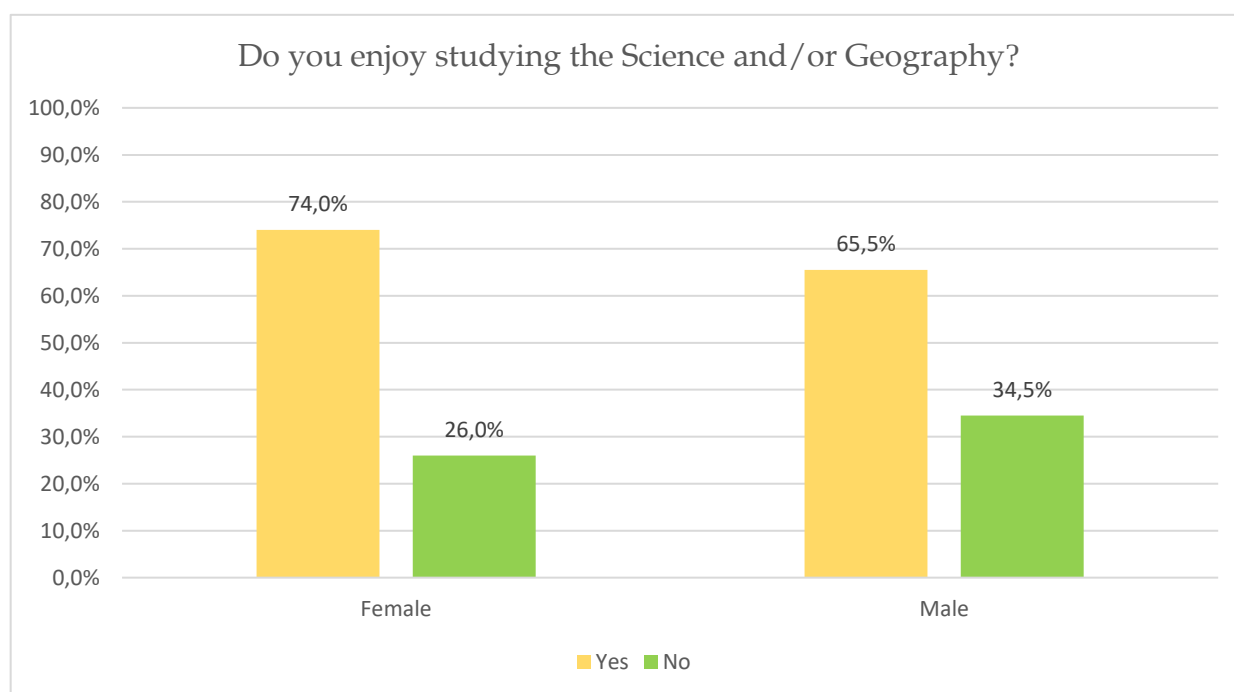
Graphic 104 presents data from the entire student sample, comprising 111 girls and 137 boys. When questioned whether they had friends in school who liked Palaeontology, most boys (49.6%) and girls (48.6%) were unsure. Among both genders (31.5% of girls and 27% of boys), the second most common answer was “No,” with “Yes” accounting for 15.3% of girls and 19% of boys.



Graphic 105: Representation of the answers to question number ten of the Life Sphere School in 1st year Irish students.

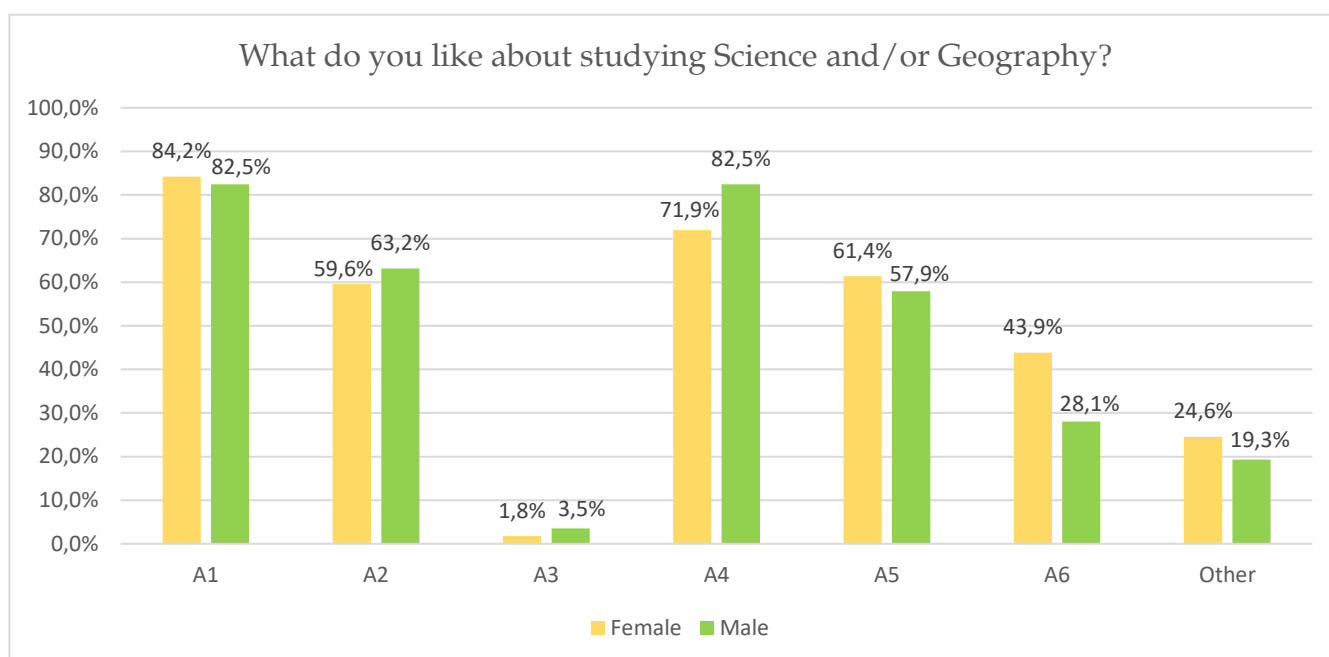
This graphic illustrates responses to question 10 among students who answered affirmatively to question nine. Consequently, the student sample comprises 17 girls and 26 boys. The predominant response among female students was negative (52.9%); however, for boys, it was positive (42.3%). Equally noteworthy, 23.5% of girls responded “Yes”, while the same percentage expressed uncertainty. Among boys, 30.8% responded negatively, and 26.9% indicated uncertainty.

2nd YEAR



Graphic 106: Representation of the answers to question number two of the Life Sphere School in 2nd year Irish students.

The graphic above represents the sample of 2nd year female and male students, comprising 77 girls and 89 boys. However, due to two invalid answers, only 87 boys were accounted for in these results. Over 60% of students (74% of girls and 65.5% of boys) say they enjoyed studying Science and/or Geography. In comparison, 26% of girls and 34.5% of boys indicated that they do not enjoy studying the subjects mentioned.



Graphic 107: Representation of the answers to question number three of the Life Sphere School in 2nd year Irish students.

Description

A1 It's interesting

A2 I like the teacher

A3 I like the textbooks

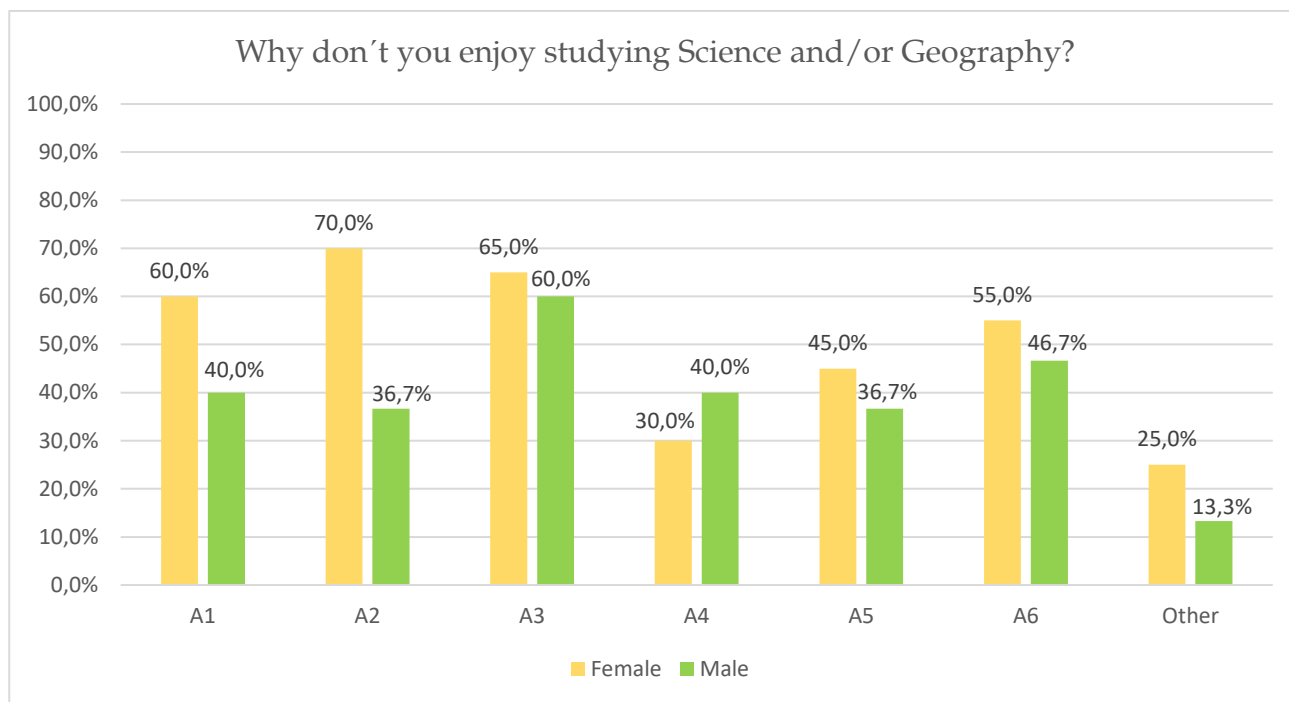
A4 I like to do experiments in the labs

A5 I like learning about how the world works

A6 I like to be able to connect what I learn in class with real life outside school

Graphic 107 includes the number of students who replied "Yes" to question two; these include 57 girls and 57 boys. Predominantly, the most common reasons both genders cite for enjoying Science/Geography are answers 1, 2, 4 and 5, with over 50% of both genders selecting these options. The students indicated an interest in the subject (84.2% of girls and 82.5% of boys), liking the teacher (59.6% of girls and 63.2% of boys), experiences in the laboratory (71.9% for girls and 82.5% for boys) and enjoying learning how the world works (61.4% for girls and 57.9% for boys) are the most significant factors contributing to their enjoyment of the subjects. Furthermore, 43.9% of girls say they enjoy the subject of Geography/Science because they can connect what they learn in class with the world outside, the same as 28.1% of boys. A smaller proportion of students (1.8% of girls and 3.5% of boys) say they like the textbooks, and 24.6% of girls and 19.3% of boys selected "Other", expressing interest in subjects like biology, the human body, learning how planet Earth evolved and other interesting topics, with girls also

mentioning atoms, and boys reporting life, space, chemistry and learning about life before humans as factors that enhance their enjoyment of Geography and Science.



Graphic 108: Representation of the answers to question number four of the Life Sphere School in 2nd year Irish students.

Description

A1 It's hard

A2 It's confusing

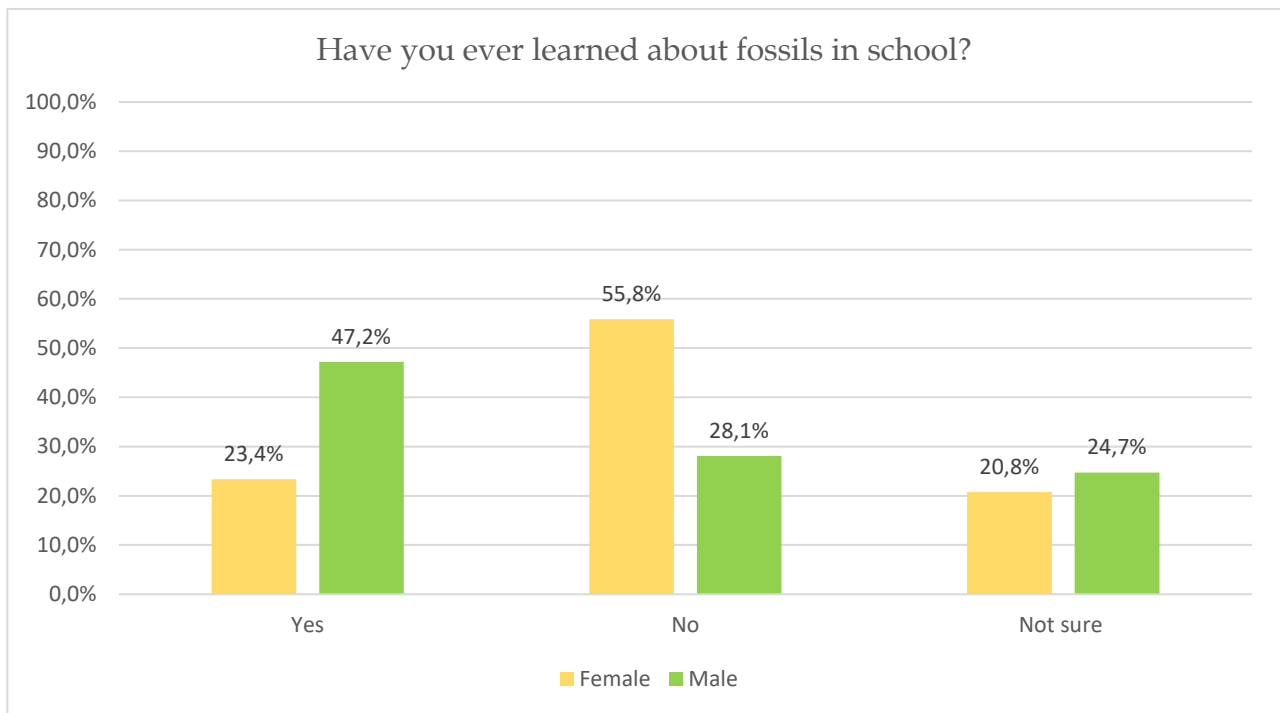
A3 It's boring

A4 I don't see it as something important to learn

A5 There are not enough field trips

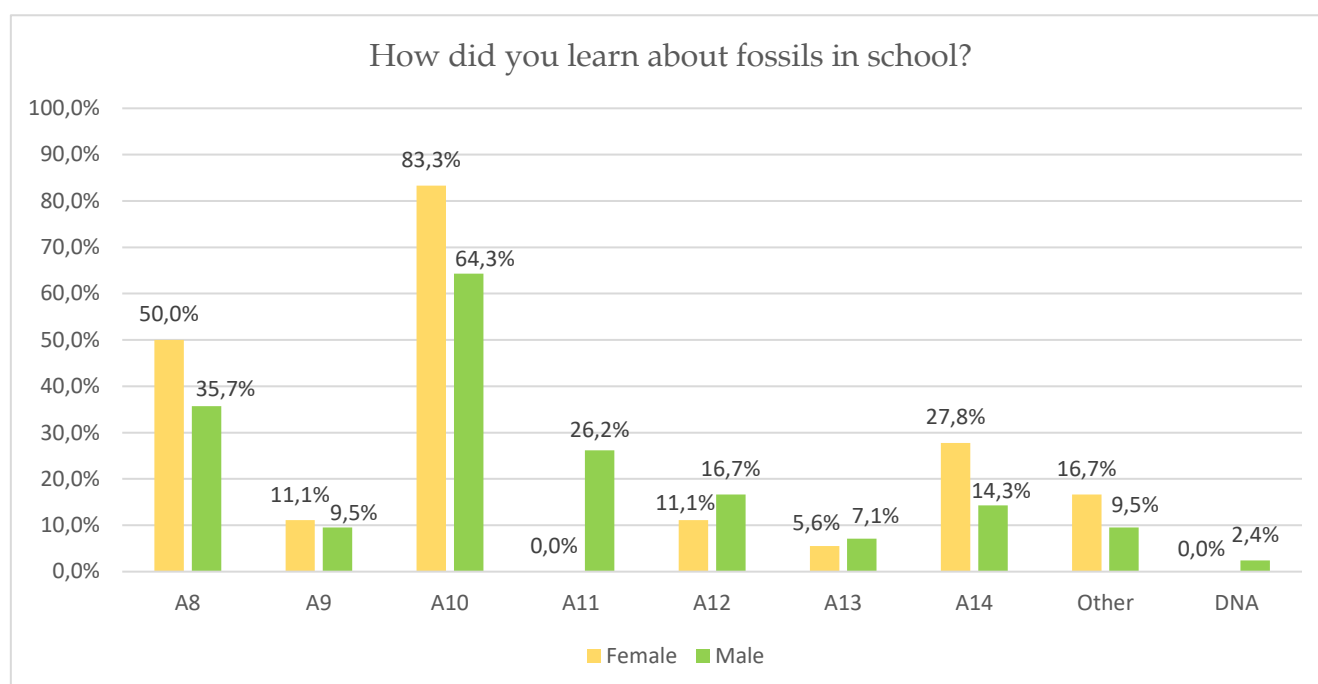
A6 I feel there is too much information

Graphic 108 includes the number of students who replied "No" to question two, comprising 20 girls and 30 boys. The graphic shows that 60% or more of girls selected the answers 1, 2 and 3. The predominant reason why girls don't like Science/Geography is that it's confusing (70%), followed by finding it boring (65%) and hard (60%). For boys, the most selected option was finding it boring (60%) and that there is too much information to learn (46.7%) agreed by 55% of girls. Boys (40%) also think that Science/Geography are difficult subjects and that they do not consider it important to learn. Moreover, 45% of girls and 36.7% of boys agree that there are insufficient field trips. Furthermore, 25% of girls and 13.3% of boys selected "Other", citing their dislike for the subject due to dissatisfaction with the teacher. The girls added several reasons, like insufficient activities that make it enjoyable, difficulty understanding the subjects, and difficulty remembering and studying the material. Meanwhile, the boys mentioned that the subjects take too much time and feel pointless.



Graphic 109: Representation of the answers to question number five of the Life Sphere School in 2nd year Irish students.

For this graphic, the entire student sample, consisting of 77 girls and 89 boys, was examined. To this question, 55.8% of female and 28.1% of male students answered “No,” representing the most considerable percentage for girls. Additionally, 23.4% of girls and 47.2% of boys say that they have learned about fossils in the classroom, compared with 20.8% of girls and 24.7% of boys showing uncertainty.



Graphic 110: Representation of the answers to question number six of the Life Sphere School in 2nd year Irish students.

Description

A8 School books

A9 Other books (not a textbook)

A10 The teacher spoke about it in class

A11:A Palaeontologist visited my school and gave a talk

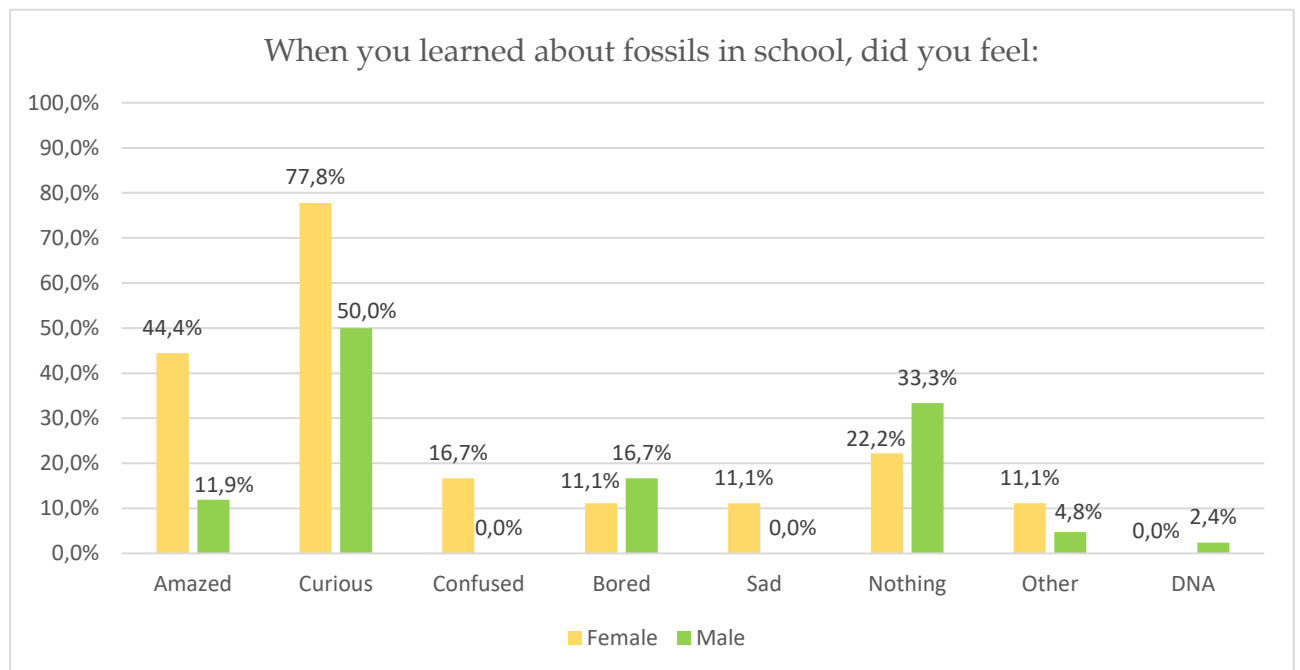
A12 Had a field trip to a museum or fossil site

A13 I looked at a website that had information about fossils

A14 Watch a video in school

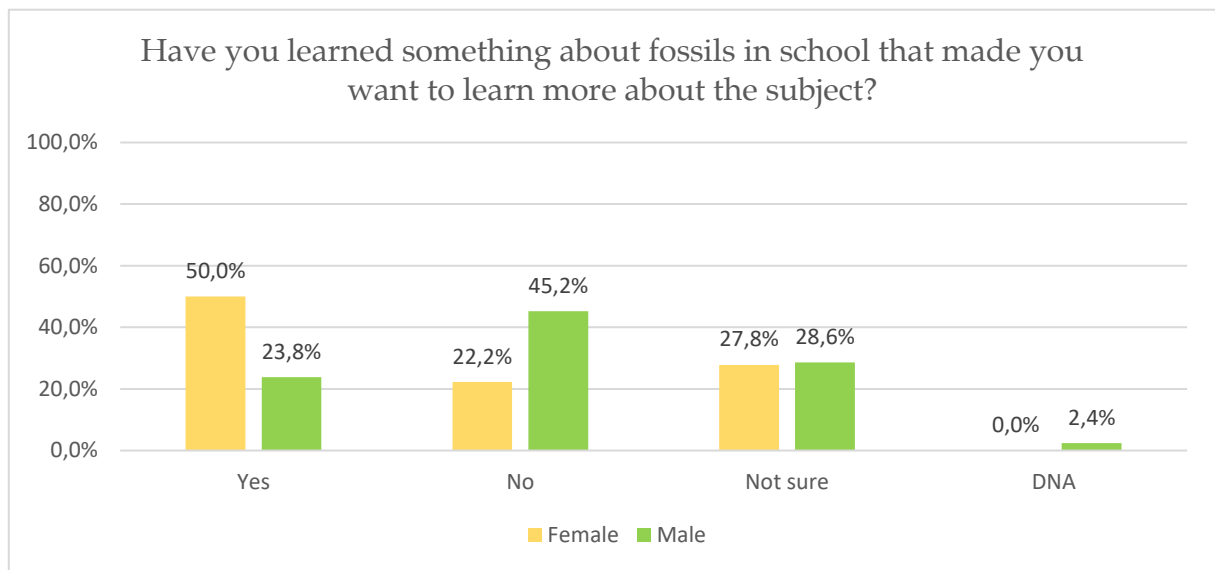
DNA: Did Not Answer

Graphic 110 solely includes responses from students who answered “Yes” to question 5, comprising 18 girls and 42 boys. Notably, for both genders, the most commonly chosen answer is number 10, discussed by the teacher in class, selected by 83.3% of girls and 64.3% of boys. Followed by school books with 50% of girls and 37.5% of boys. The third most prevalent response for girls (27.8%) is watching a video in school about fossils; for boys (26.2%), a palaeontologist visited the school and gave a talk, with no girls selecting this option. Moreover, 16.7% of girls selected “Other”, indicating learning about fossils through documentaries or when a fellow classmate brought a fossil to school and discussing it in Primary school. Additionally, 9.5% of boys also mentioned that “someone” came to their school to talk about fossils and they also saw fossils displayed on a wall at Tesco.



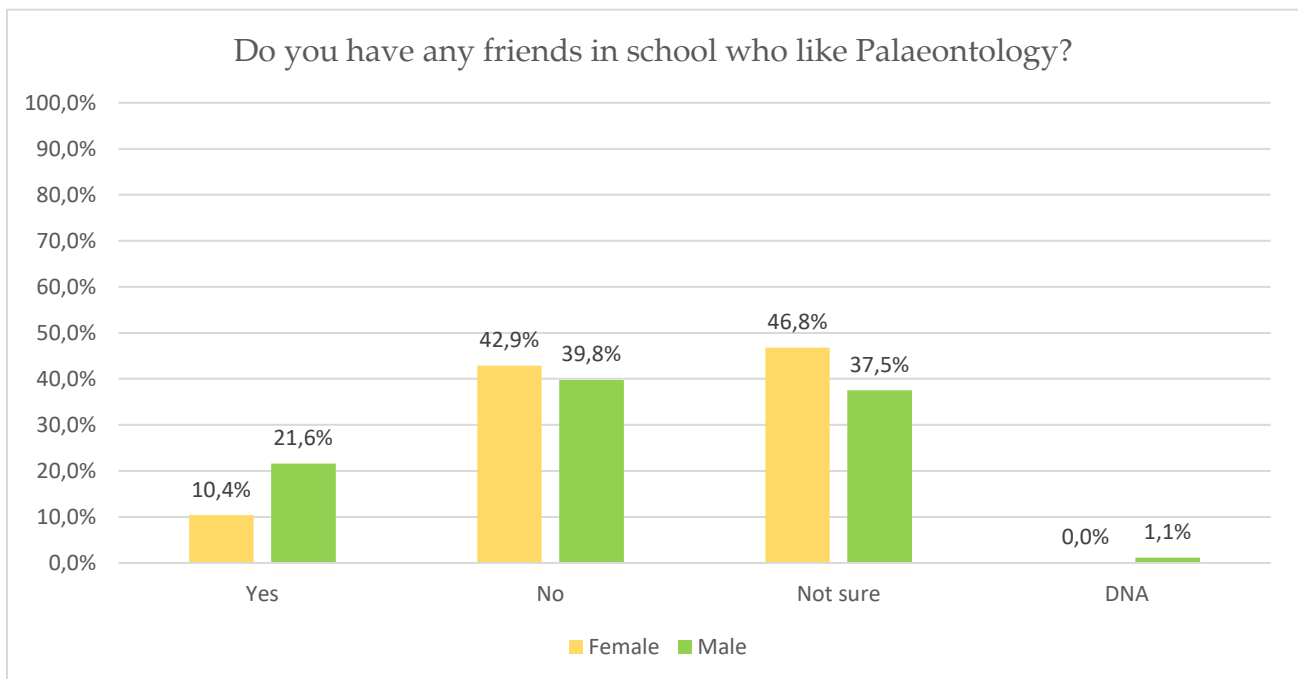
Graphic 111: Representation of the answers to question number seven of the Life Sphere School in 2nd year Irish students.

For this visual representation, the sample of students were those who replied affirmatively to question 5, totalling 18 girls and 42 boys. When queried about their emotions upon learning about fossils in school, the predominant sentiment among both genders was curiosity, with 77.8% of girls and 50% of boys expressing this feeling. Following curiosity, girls most commonly reported feeling Amazed (44.4%), whereas boys were likelier to feel Nothing (33.3%) as 22.2% of girls. Boys' third most prevalent response was feeling Bored (16.7%), with 11.1% of girls also selecting this answer. Additionally, 11.1% of girls and 4.8% of boys replied "Other", citing feelings such as interest and a girl feeling intrigued.



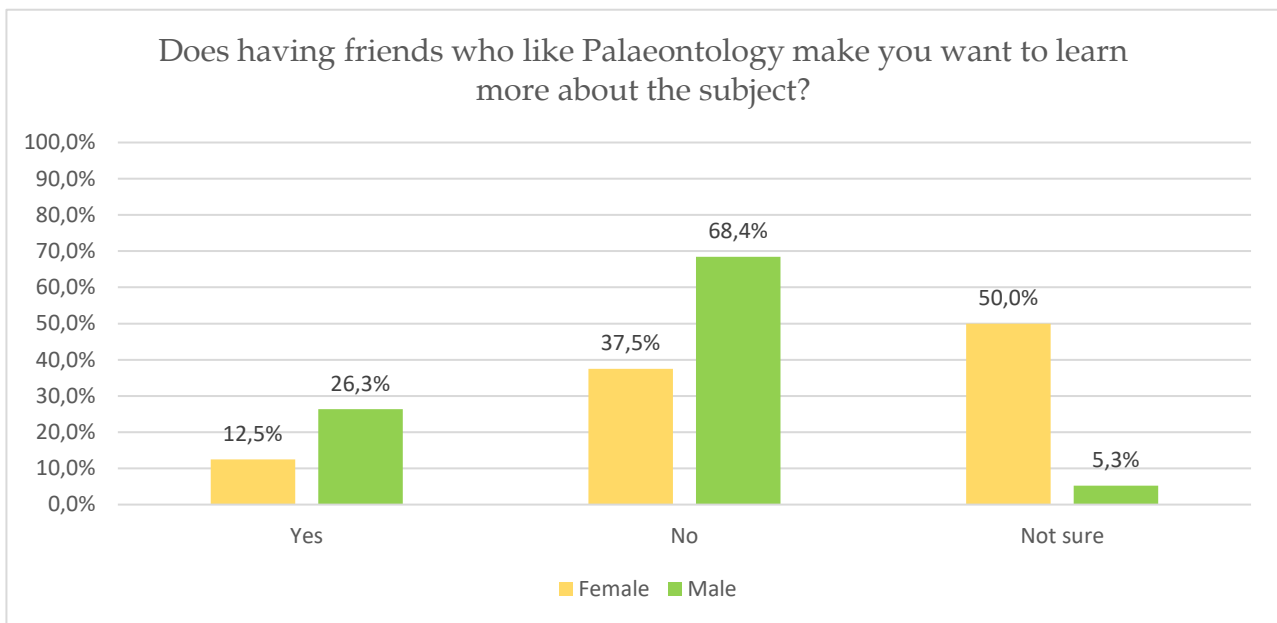
Graphic 112: Representation of the answers to question number eight of the Life Sphere School in 2nd year Irish students.

Graphic 112 utilises data from the student sample who replied “Yes” to question 5. This includes 18 girls and 42 boys. When asked about finding an interest in fossils when studying the subject, 45.2% of boys and 22.2% of girls replied “No”. Additionally, the biggest answer for girls (50%) was affirmative, compared with 23.8% of male students. For girls, 27.8% and 28.6% of boys replied with uncertainty.



Graphic 113: Representation of the answers to question number nine of the Life Sphere School in 2nd year Irish students.

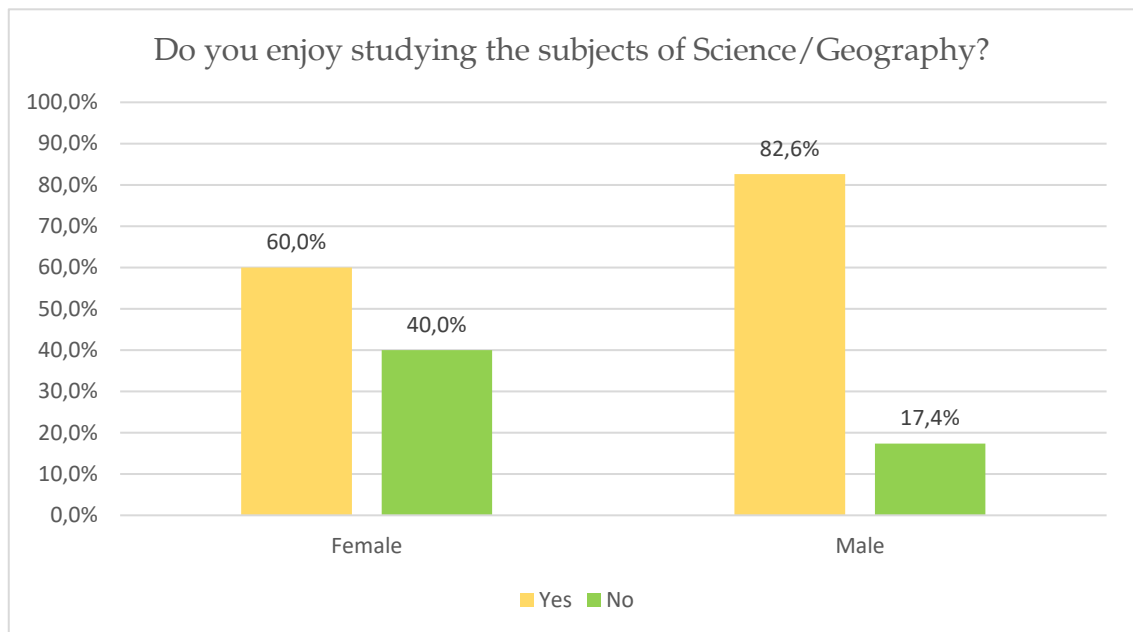
Graphic 113 presents data from the entire student sample, comprising 77 girls and 89 boys. However, due to an invalid answer, only 88 boys were accounted for in the results. When questioned whether they had friends in school who liked Palaeontology, 39.8% of boys and 42.9% of girls replied “No,” with 46.8% of girls and 37.5% of boys being unsure and “Yes” accounting for 10.4% of girls and 21.6% of boys.



Graphic 114: Representation of the answers to question number ten of the Life Sphere School in 2nd year Irish students.

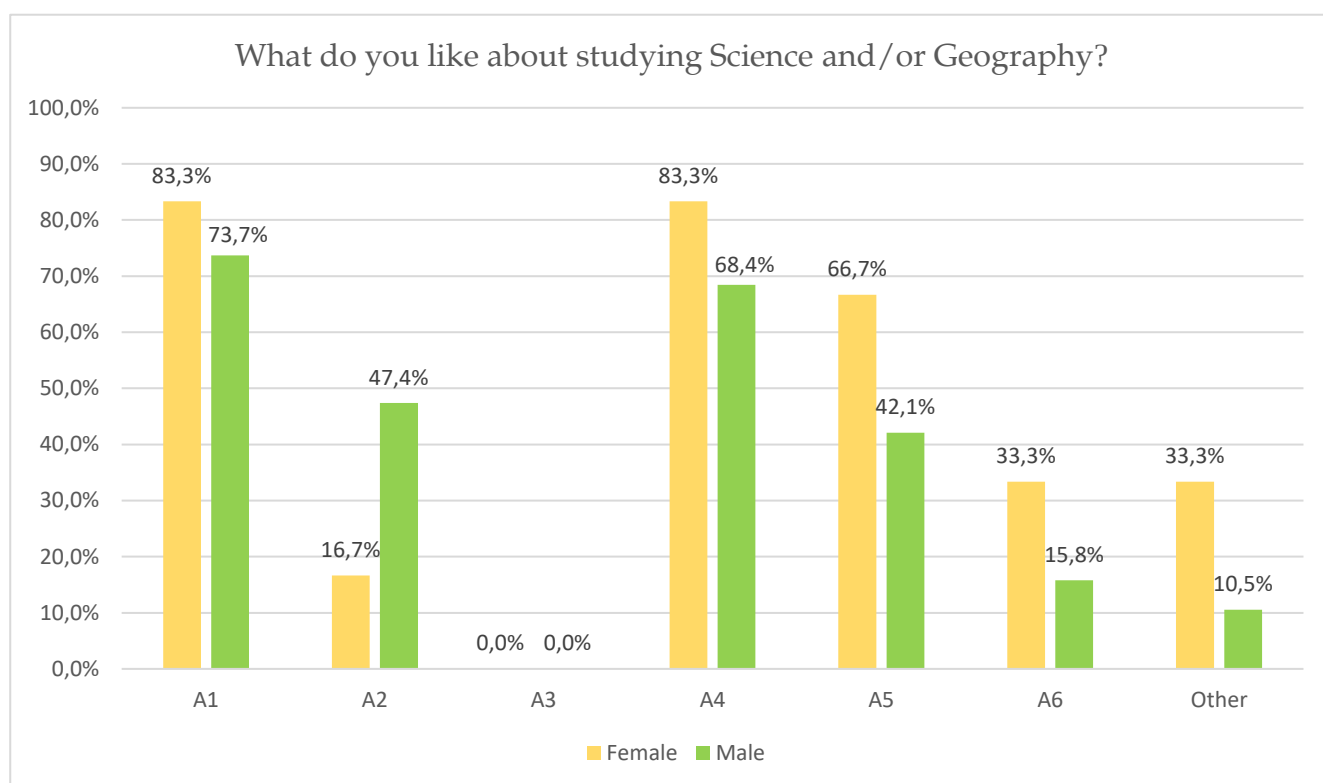
This graphic illustrates responses to question 10 among students who answered affirmatively to question 9. Consequently, the student sample comprises 8 girls and 19 boys. The predominant response among male students was negative (68.4%); however, for girls, it was uncertainty (50%). Additionally, 12.5% of girls and 26.3% of boys responded “Yes”.

3rd YEAR



Graphic 115: Representation of the answers to question number two of the Life Sphere School in 3rd year Irish students.

The graphic above represents the complete sample of 3rd year female and male students, comprising 10 girls and 23 boys. Over 50% of students (60% of girls and 82.6% of boys) say they enjoyed studying Science and/or Geography. In comparison, 40% of girls and only 17.5% of boys indicated that they do not enjoy studying the subjects mentioned.

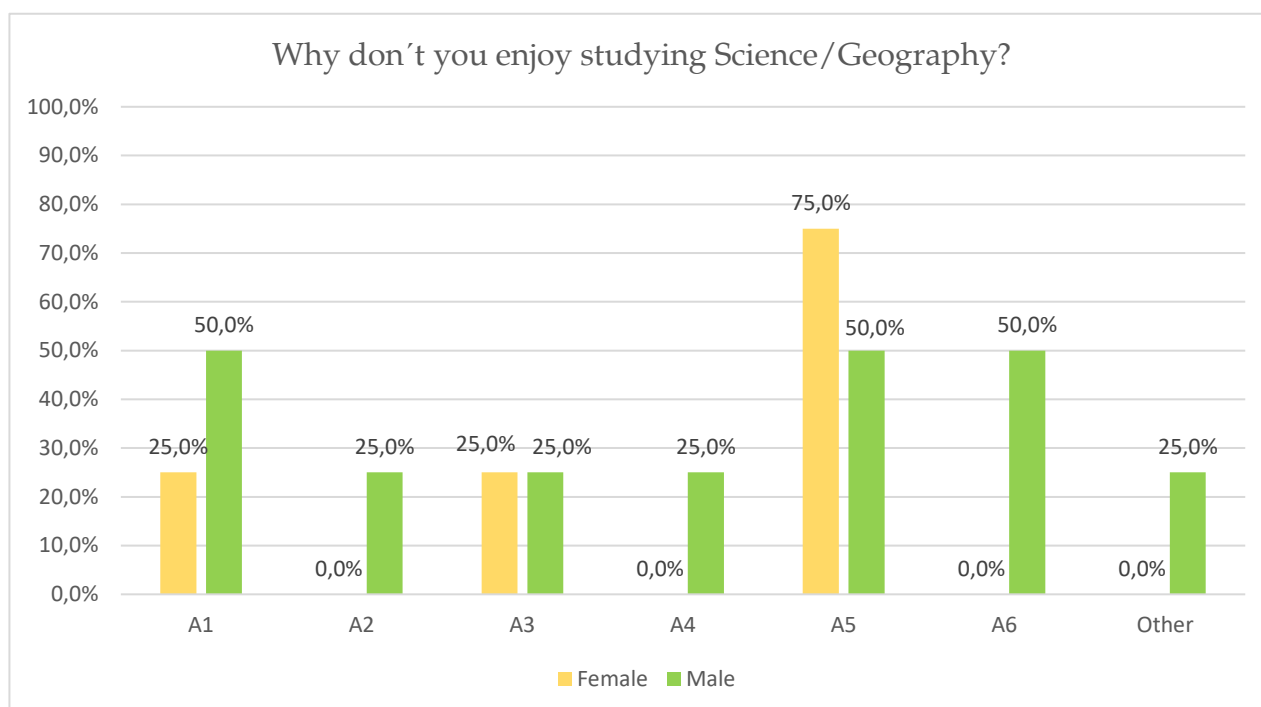


Graphic 116: Representation of the answers to question number three of the section School in 3rd year Irish students.

Description

- | | |
|--------------------------------|--|
| A1 It's interesting | A4 I like to do experiments in the labs |
| A2 I like the teacher | A5 I like learning about how the world works |
| A3 I like the textbooks | A6 I like to be able to connect what I learn in class with real life outside school |

Graphic 116 includes the number of students who replied “Yes” to question two; these include 6 girls and 19 boys. Predominantly, the most common reasons both genders cite for enjoying Science/Geography are answers 1 and 4, with over 60% of both genders selecting these options. The students indicated an interest in the subject (83.3% of girls and 73.7% of boys) and experiences in the laboratory (83.3% for girls and 68.4% for boys) as factors that make them enjoy the subjects. Furthermore, 66.7% of girls say they enjoy the subject of Geography/Science because they learn about how the world works, the same as 42.1% of boys. Some students (16.7% of girls and 47.4% of boys) say they like the teacher, and 33.3% of girls and 10.5% of boys selected “Other”, expressing interest in biology, prehistoric life and people’s different perspectives.



Graphic 117: Representation of the answers to question number four of the Life Sphere School in 3rd year Irish students.

Description

A1 It's hard

A2 It's confusing

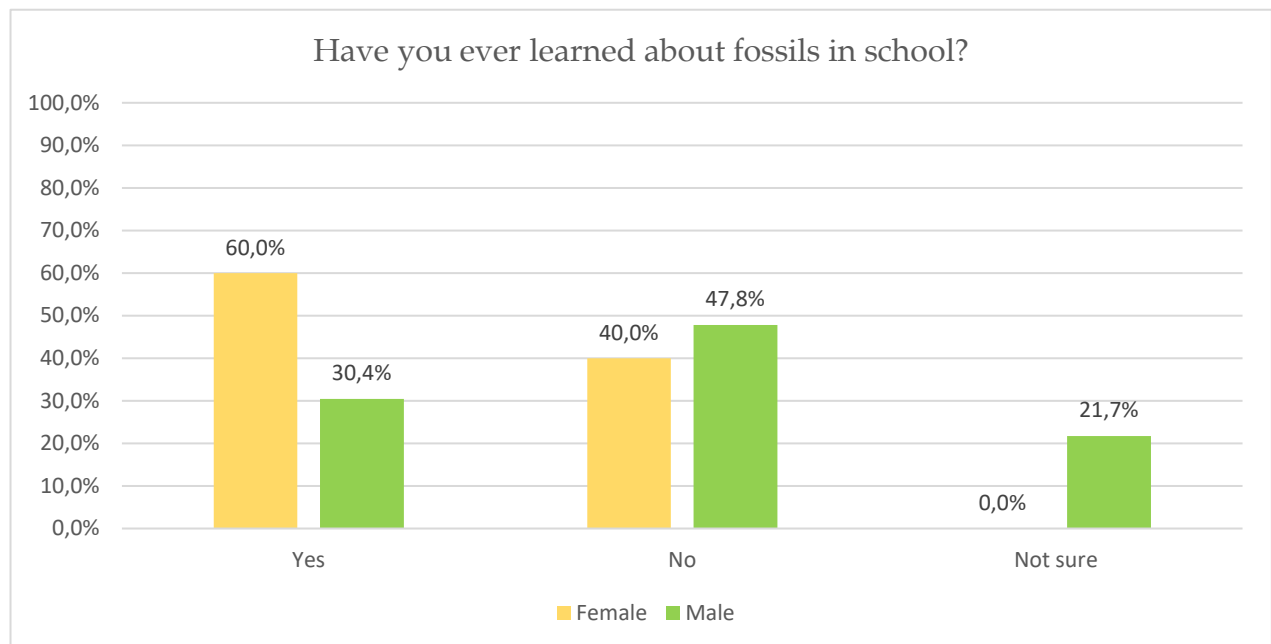
A3 It's boring

A4 I don't see it as something important to learn

A5 There are not enough field trips

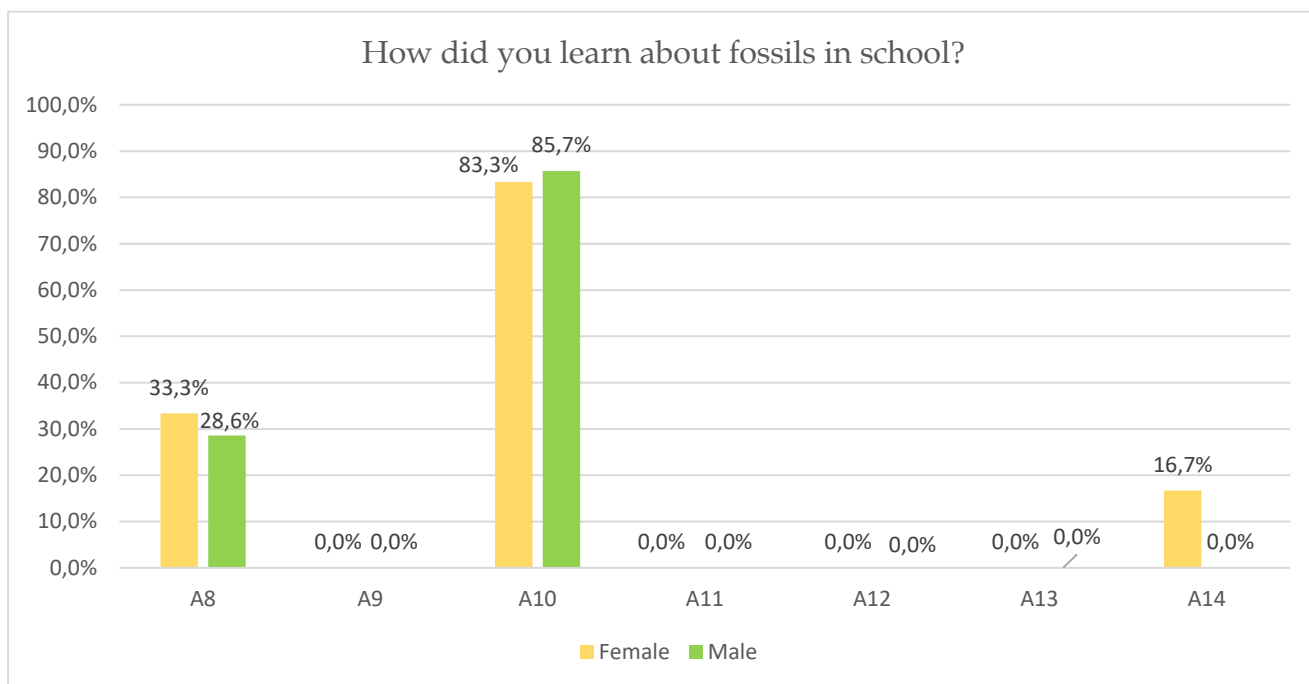
A6 I feel there is too much information

Graphic 117 includes the number of students who replied "No" to question two, comprising of 4 girls and 4 boys. The graphic shows that 75% of girls and 50% of boys say that the main factor contributing to their dislike of Science/Geography is insufficient field trips. Furthermore, 25 % of girls and 50% of boys also mentioned that it is a hard subject/s, and 25% of both genders say it's tedious. Moreover, 25% of boys added the option "Other" citing that they don't like the subject/s because of the teacher.



Graphic 118: Representation of the answers to question number five of the Life Sphere School in 3rd year Irish students.

The entire student sample, consisting of 10 girls and 23 boys, was examined for this graphic. To this question, 60% of female and 30.4% of male students answered “Yes,”. Additionally, 40% of girls and 47.8% of boys say that they have never learned about fossils in school, compared with 21.7% of boys showing uncertainty.



Graphic 119: Representation of the answers to question number six of the Life Sphere School in 3rd year Irish students.

Description

A8 School books

A9 Other books (not a textbook)

A10 The teacher spoke about it in class

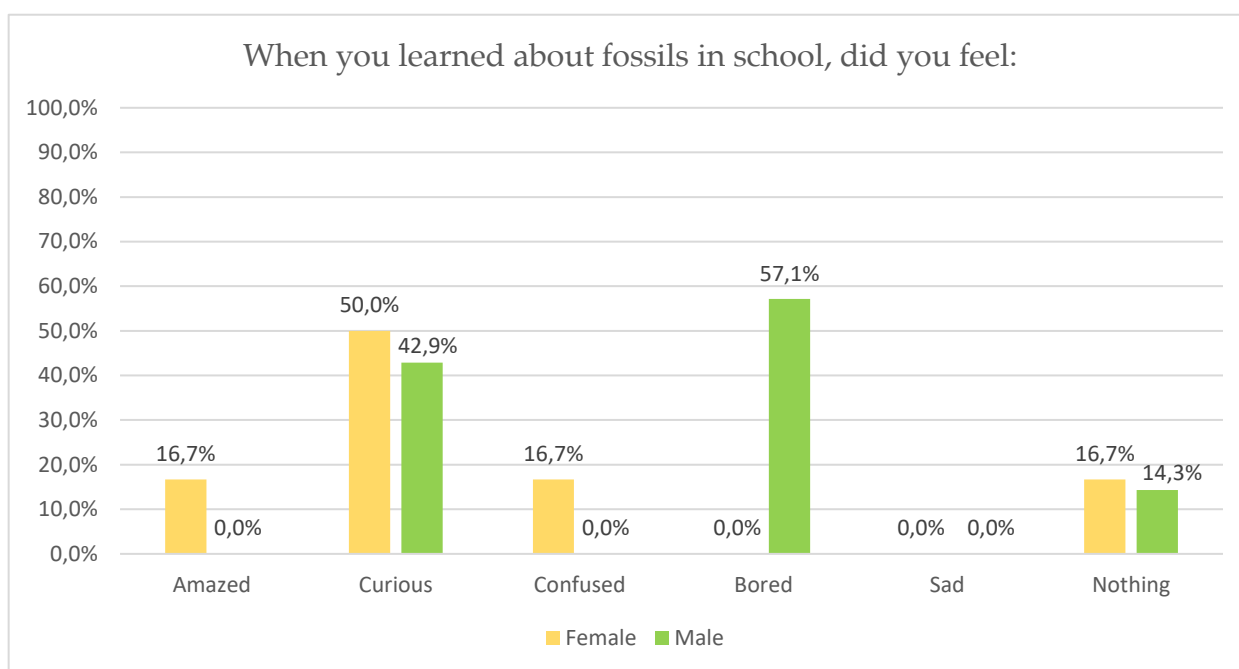
A11 A Palaeontologist visited my school and gave a talk

A12 Had a field trip to a museum or fossil site

A13 I looked at a website that had information about fossils

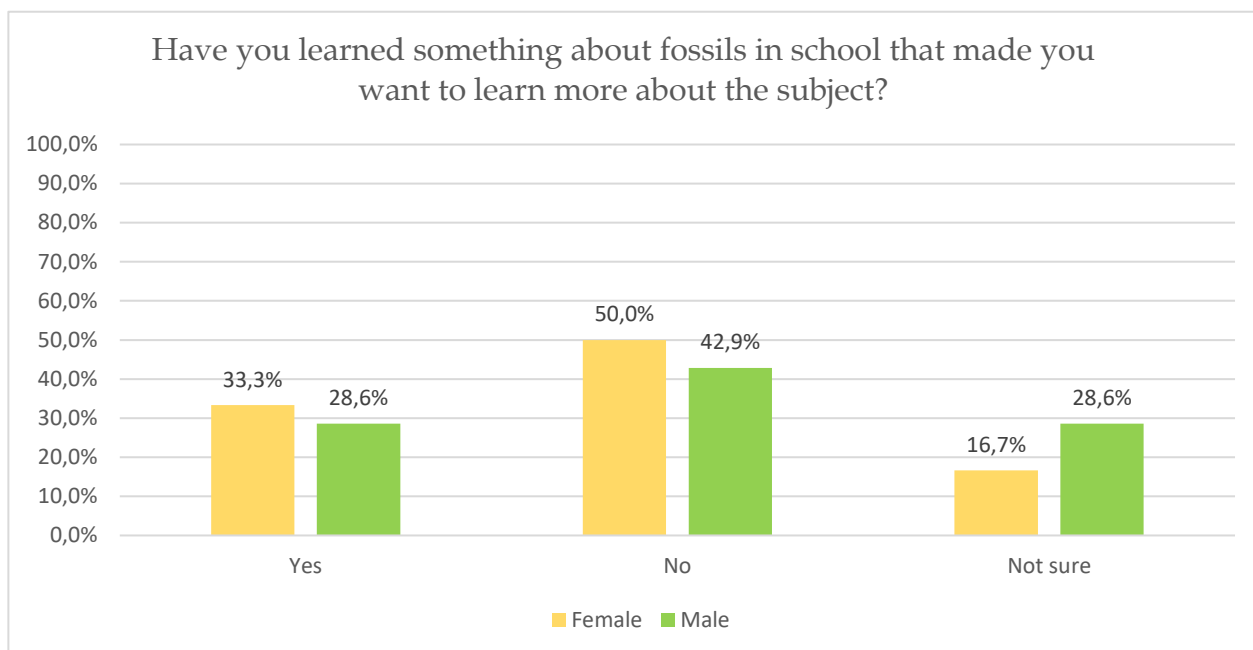
A14 Watch a video in school

Graphic 119 solely includes responses from students who answered “Yes” to question 5, comprising 6 girls and 7 boys. Notably, for both genders, the most commonly chosen answer is number 10, discussed by the teacher in class, selected by 83.3% of girls and 85.7% of boys. This is followed by school books, with 33.3% of girls and 28.6% of boys selecting this option. Moreover, 16.7% of girls say they have watched a video in school.



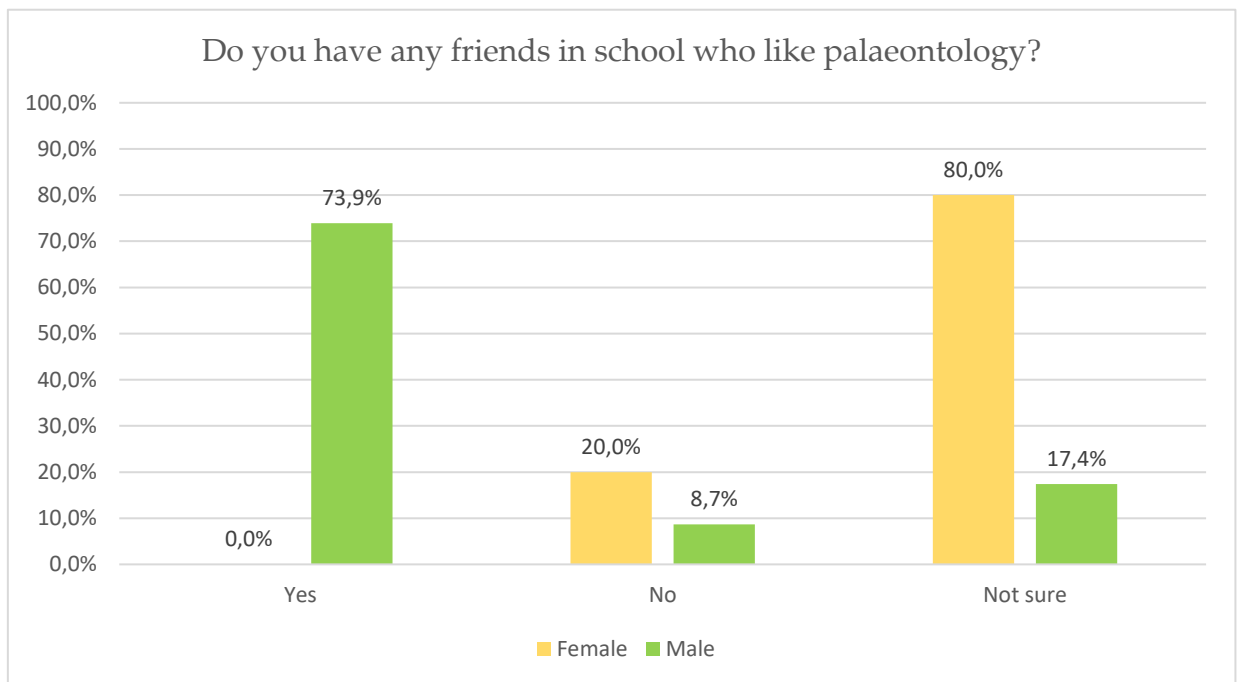
Graphic 120: Representation of the answers to question number seven of the Life Sphere School in 3rd year Irish students.

For this visual representation, the sample of students were those who replied affirmatively to question 5, totalling 6 girls and 7 boys. When queried about their emotions upon learning about fossils in school, the predominant sentiment among girls was curiosity, with 50% of girls expressing this feeling compared to 42.9% of boys. For boys, boredom was the most common sentiment, with 57.1% selecting this option. For 16.7% of girls, feelings such as Amazed, Confused and Nothing were selected. This last one was also selected by 14.3% of boys.



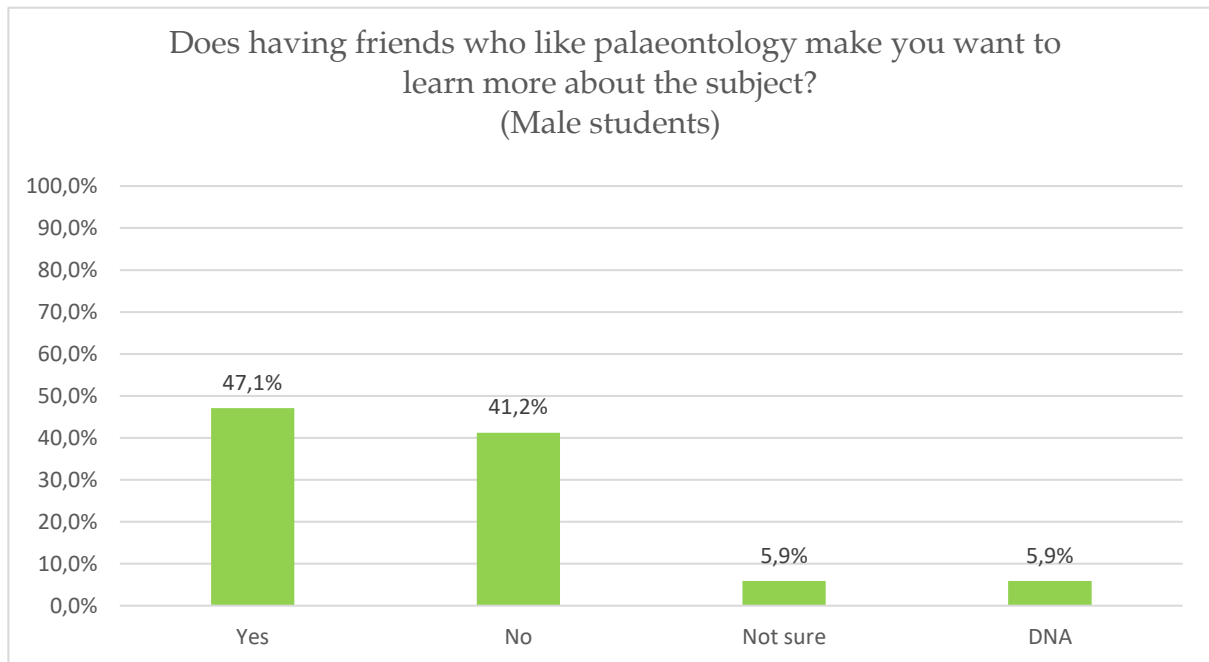
Graphic 121: Representation of the answers to question number eight of the Life Sphere School in 3rd year Irish students.

Graphic 121 utilises data from the student sample who replied “Yes” to question 5. This includes 6 girls and 7 boys. When asked about finding an interest in fossils when studying the subject, 50% of girls and 42.9% of boys replied “No”. Additionally, 33.3% of girls and 28.6% of boys responded affirmatively, compared with 16.7% of girls and 28.6% of boys who replied with uncertainty.



Graphic 122: Representation of the answers to question number nine of the Life Sphere School in 3rd year Irish students.

Graphic 122 presents data from the entire student sample, comprising 10 girls and 23 boys. When questioned whether they had friends in school who liked Palaeontology, 20% of girls and 8.7% of boys replied “No,” with 80% of girls and 17.4% of boys being unsure and “Yes” accounting for 73.9% of boys.

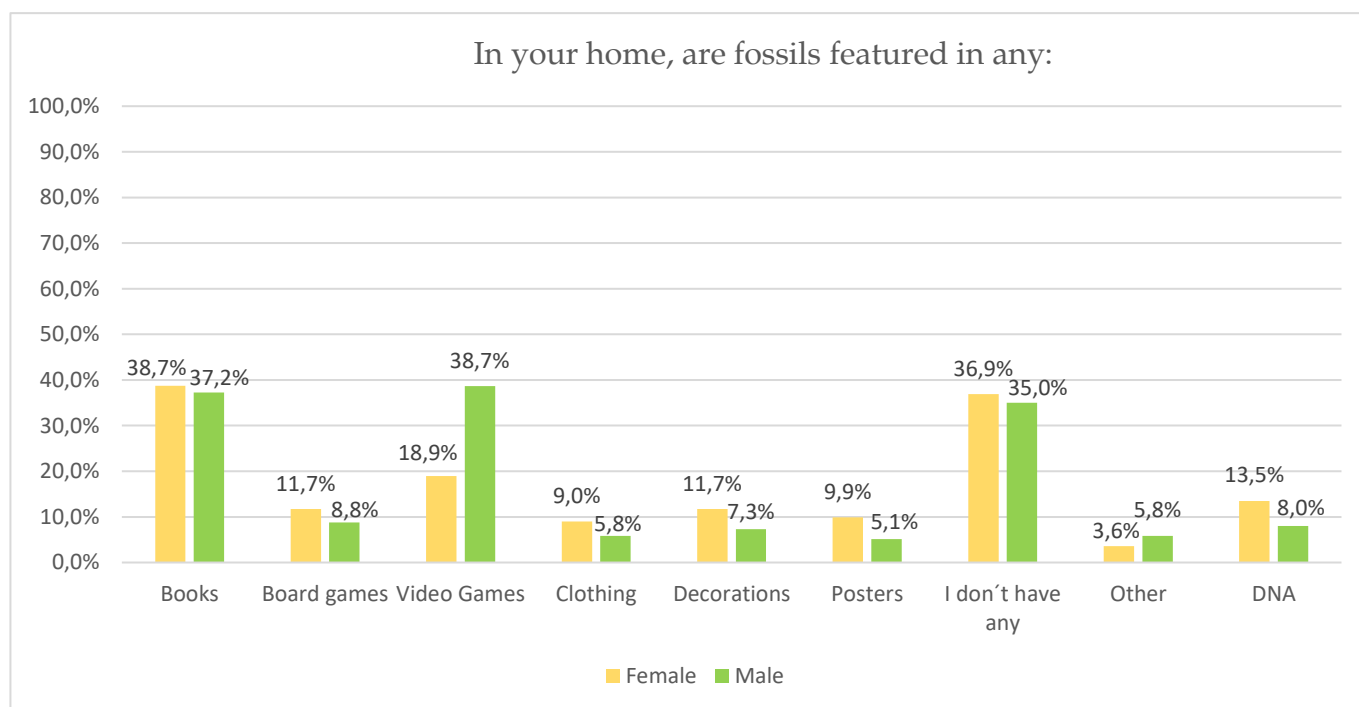


Graphic 123: Representation of the answers to question number ten of the Life Sphere School in 3rd year Irish students.

This graphic illustrates responses to question 10 among students who answered affirmatively to question 9, which were only male. Consequently, the student sample comprises 17 boys. The predominant response was positive, with 47.1% of boys saying that having friends interested in Palaeontology makes them want to know more about the subject. Only 5.9% replied with uncertainty, and 41.2% of the sample responded negatively.

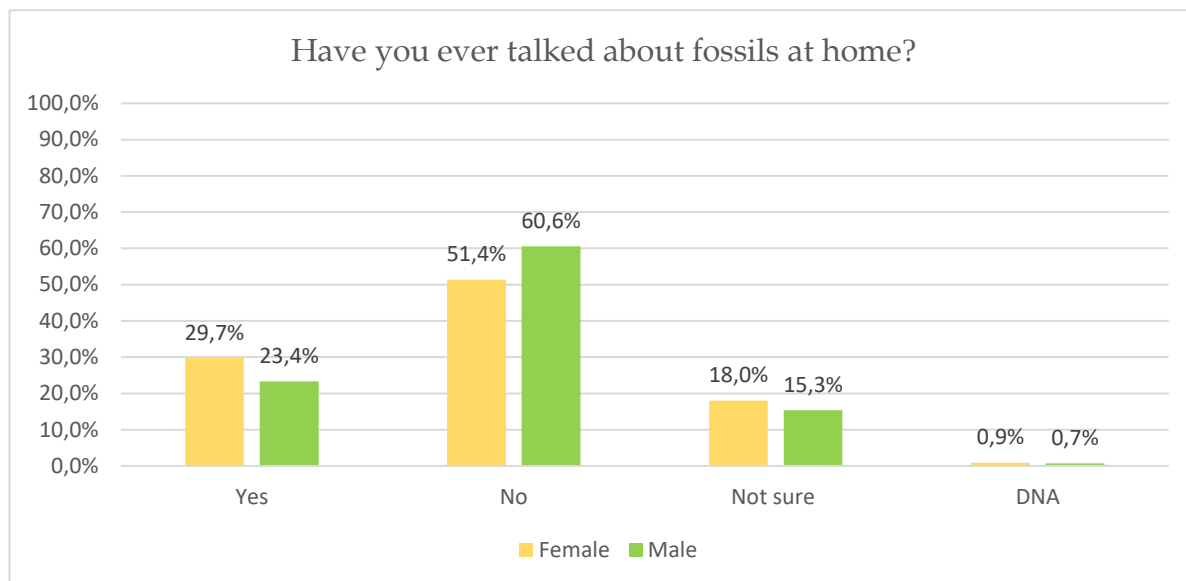
Annexe VIII - Graphics from survey results: Ireland Life Sphere Home

1ST YEAR



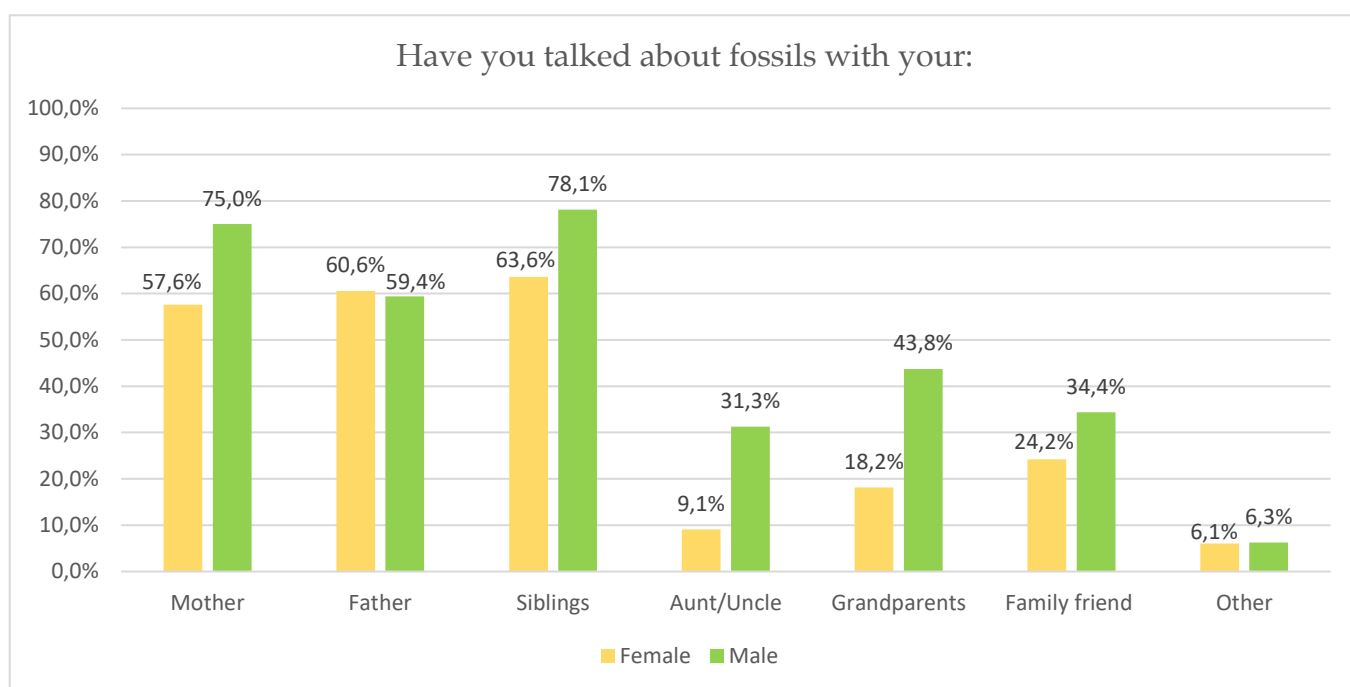
Graphic 124: Representation of the answers to question number one of the Life Sphere Home in 1st year Irish students.

Graphic 124 focuses on 1st year students, a sample size of 111 girls and 137 boys. The most significant finding was that books were the top choice for girls, with 38.7% selecting this option, while video games were the second most common answer for girls, with 18.9% selecting this choice. For boys, video games were the most commonly featured objects with fossils in their homes (38.7%) before books (37.2%). Board games and decorations ranked third most common among girls (11.7%), and for boys, board games (8.8%) were more common than decorations (7.3%). About 9% of girls and 5.8% of boys selected having clothing or posters featuring fossils (9.9% of girls and 5.1% of boys). Additionally, 36.9% of girls and 35% of boys emphasised the absence of fossils displayed in their homes. In the “Other” category, 5.8% of boys and 3.6% of girls cited films, conversations about fossils, and fossil collections at home, with boys also adding toys, TikTok and documents.



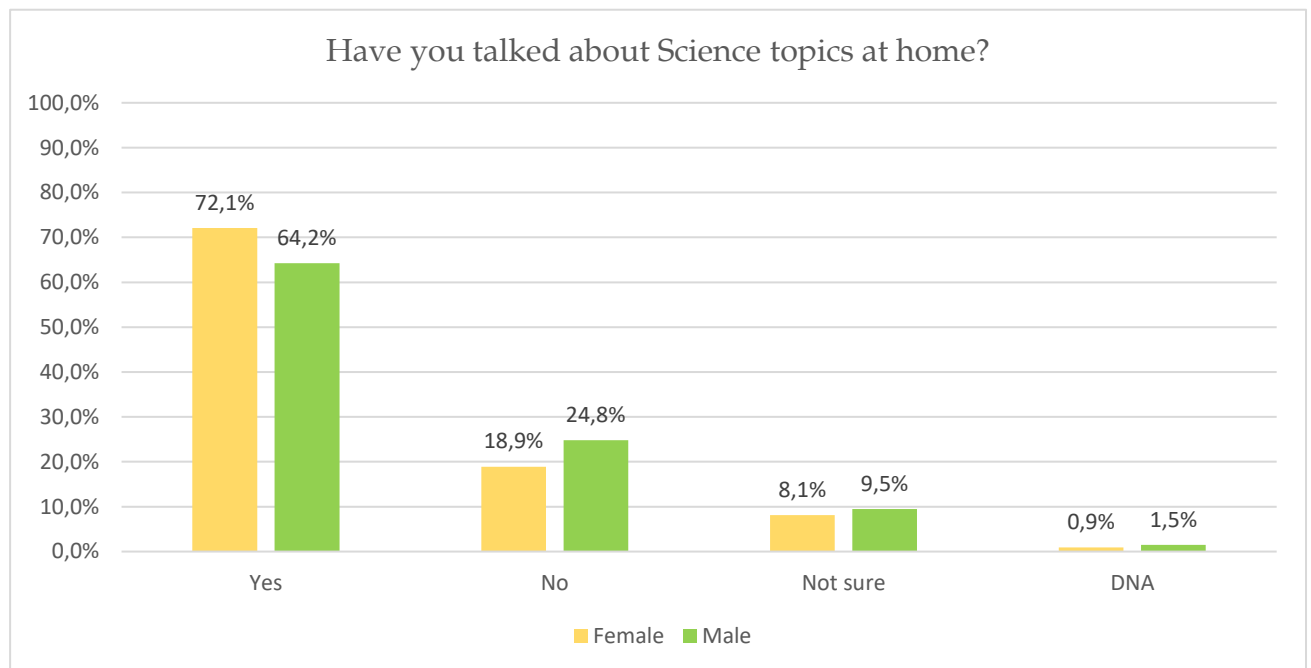
Graphic 125: Representation of the answers to question number two of the Life Sphere Home in 1st year Irish students.

This graphic represents the sample of 1st year female and male students, comprising 111 girls and 137 boys. Notably, the answer with the highest percentage for both genders is “No” (51.4% of girls and 60.6% of boys). Only 29.7% of girls and 23.4% of boys indicate that they do discuss fossils at home, while 18% of girls and 15.3% of boys express uncertainty on the matter.



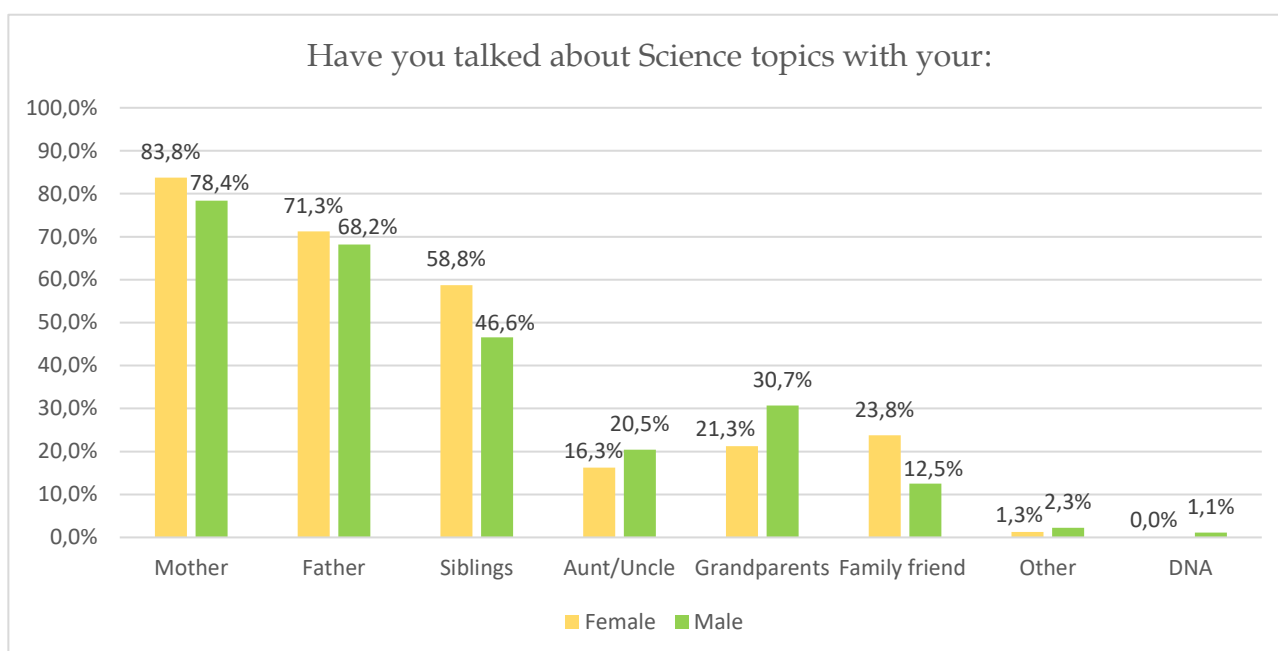
Graphic 126: Representation of the answers to question number three of the Life Sphere Home in 1st year Irish students.

For this visual representation, the sample of students consisted of those who replied affirmatively to question 2 of the Home Life Sphere, totalling 33 girls and 32 boys. Boys (78.1%) and girls (63.6%) talk primarily with their siblings about fossils, followed by their mother for boys (75%) and father for girls (60.6%). Grandparents are also members of the family who contribute to discussing this subject, with 43.8% of boys and 18.2% of girls selecting this answer. Moreover, boys (6.3%) and girls (6.1%) added the option “Other”, with boys citing cousins and female students adding friends and neighbours as people they discuss fossils with.



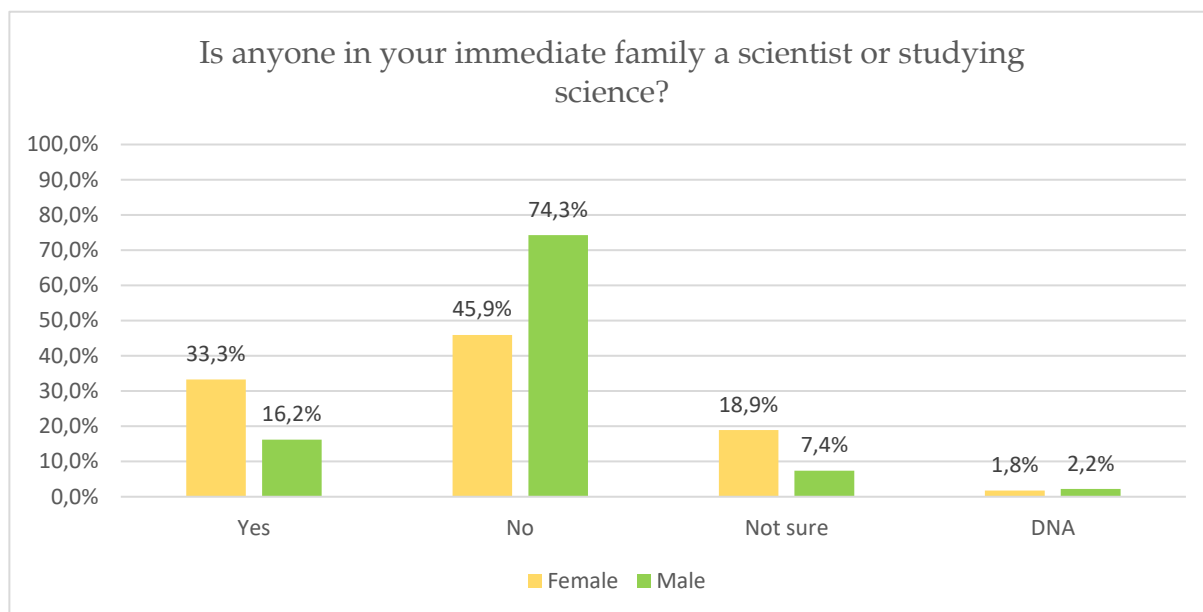
Graphic 127: Representation of the answers to question number four of the Life Sphere Home in 1st year Irish students.

Graphic 127 displays the overall number of students who participated in the surveys: 111 girls and 137 boys. The predominant response among female and male students regarding discussing scientific topics at home is “Yes,” with 72.1% of girls and 64.2% of boys selecting this option. A percentage of 18.9% of girls and 24.8% of boys stated that they do not engage in such discussion, while 8.1% of girls and 9.5% of boys expressed uncertainty.



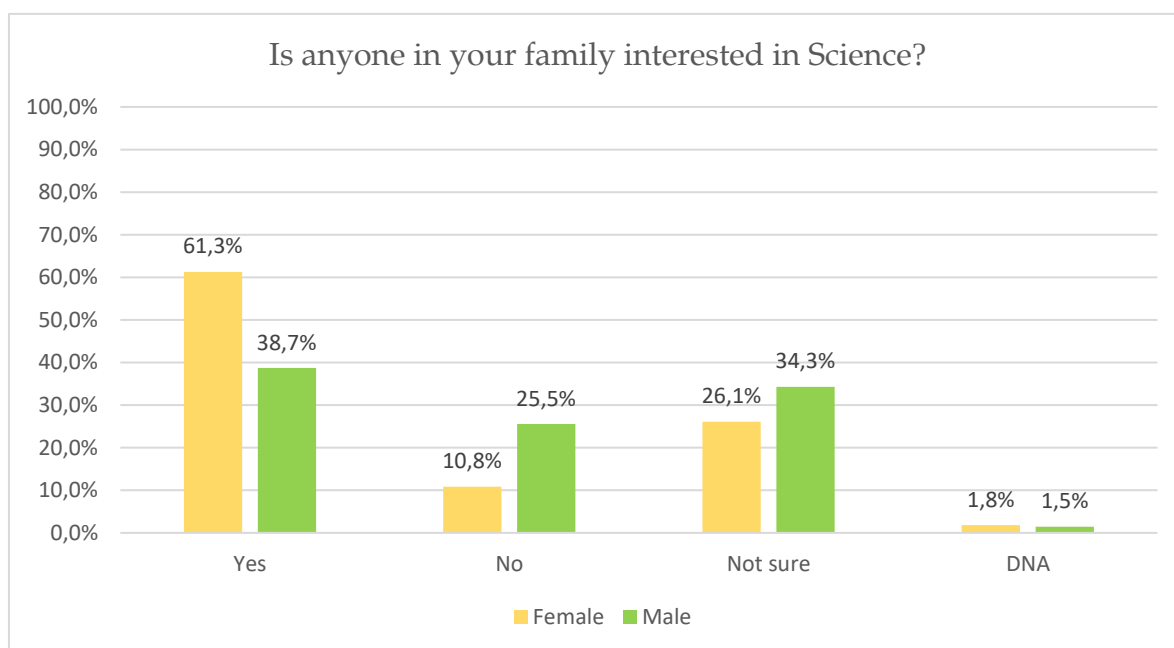
Graphic 128: Representation of the answers to question number five of the Life Sphere Home in 1st year Irish students.

For graphic number 128, the sample of students was those who replied affirmatively to question 4 of the Home Life Sphere, totalling 80 girls and 88 boys. Both girls (83.8%) and boys (78.4%) talk primarily with their mother about science, followed by their father (girls with 71.3% and boys with 68.2%) and siblings (58.8% for girls and 46.6% for boys). Grandparents are also members of the family who contribute to discussing this subject, with 21.3% of girls and 30.7% of boys selecting this option. Moreover, both genders (boys for 2.3% and girls for 1.3%) added the option “Other”, with girls mentioning teachers and boys including cousins and friends, as people they engage in Science discussions with.



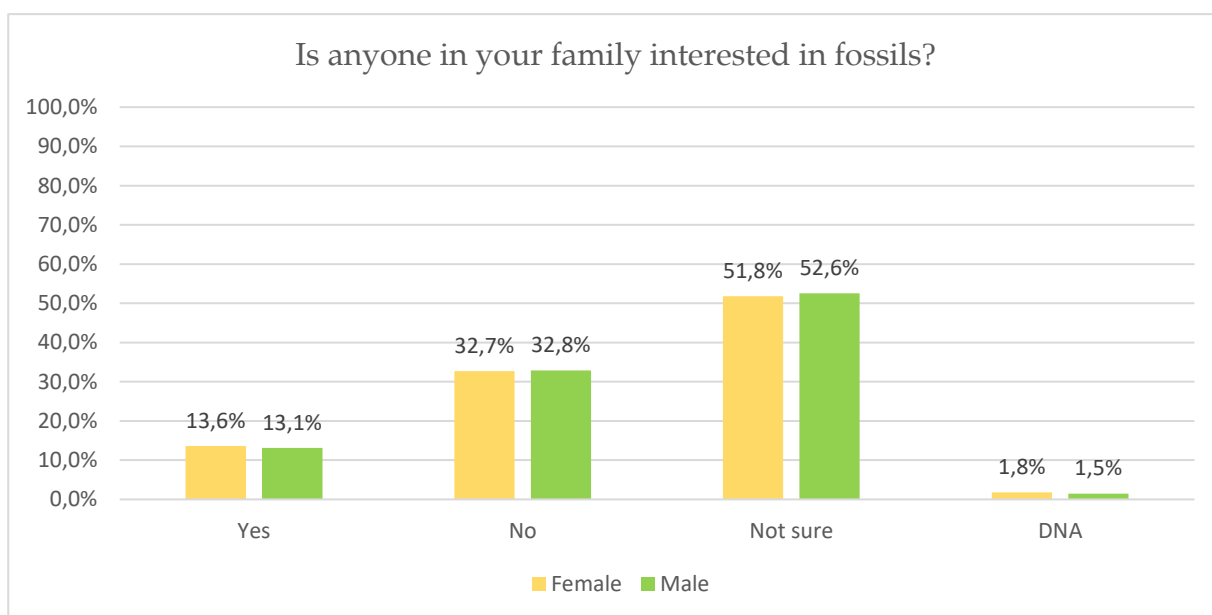
Graphic 129: Representation of the answers to question number six of the Life Sphere Home in 1st year Irish students.

Graphic 129 represents the entire sample of 111 girls and 137 boys. However, only 136 boys were accounted for this question due to one invalid answer. The most common response to whether the students have a family member studying science or working as a scientist for both genders was “No”, with 45.9% of girls and 74.3% of boys selecting this option. This was followed by “Yes”, with 33.3% of girls and 16.2% of boys. Only 18.9% of girls and 7.4% of boys expressed uncertainty.



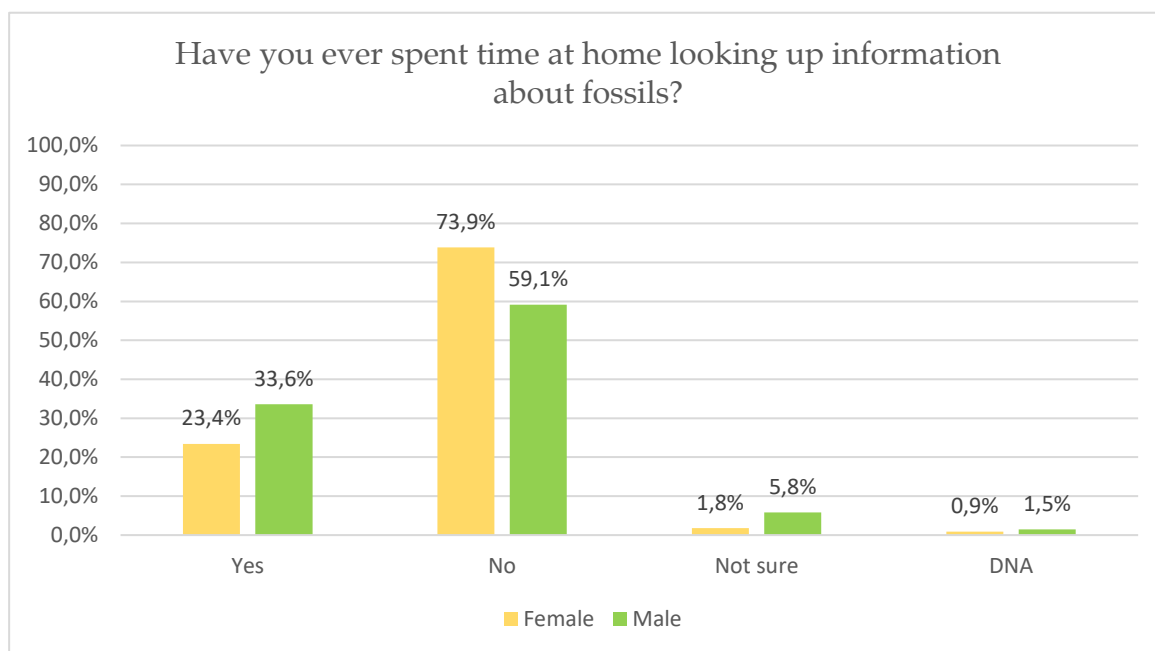
Graphic 130: Representation of the answers to question number seven of the Life Sphere Home in 1st year Irish students.

In graphic 130, the sample of 111 girls and 137 boys is represented. The most common answer when asking if the students have someone in their family interested in science is “Yes” for girls (61.3%) and boys (38.7%), followed by 26.1% of female students and 34.3% of male students not knowing, and 10.8% of girls and 25.5% of boys replying “No”.



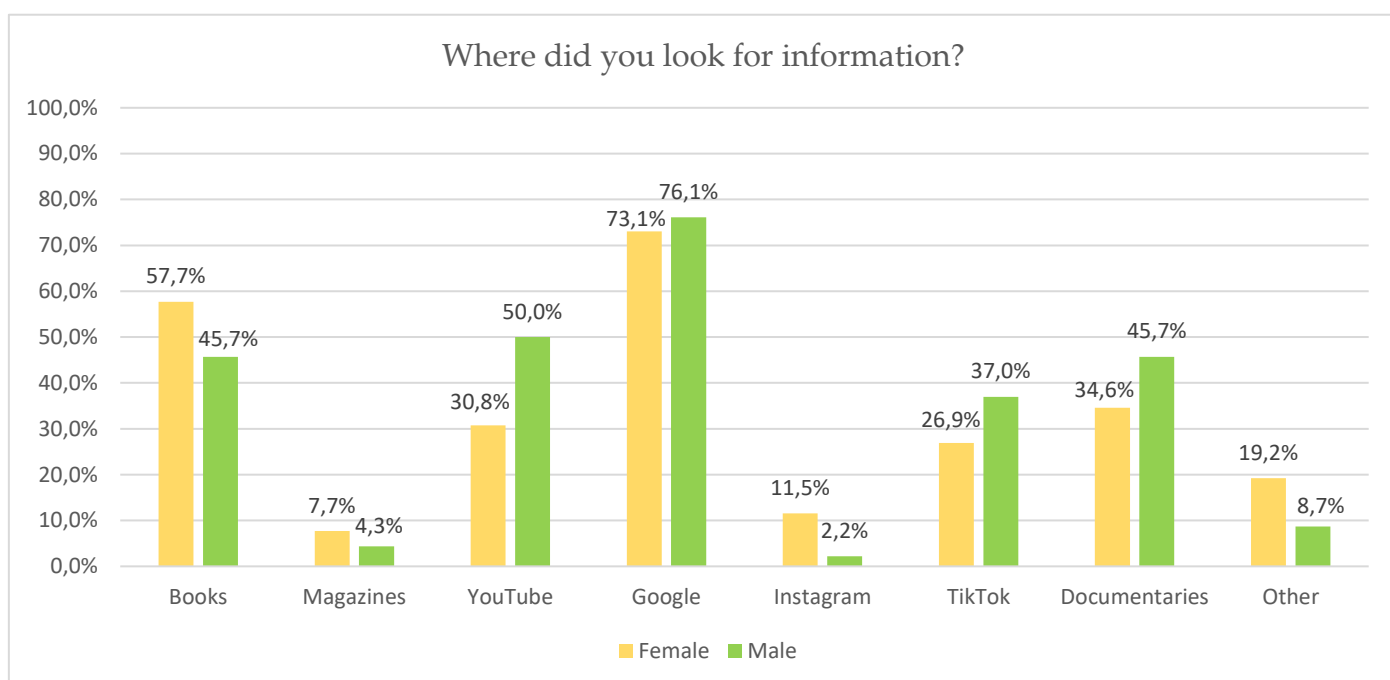
Graphic 131: Representation of the answers to question number eight of the Life Sphere Home in 1st year Irish students.

Graphic 131 represents the total sample of 1st year Irish students who completed the surveys: 111 girls and 137 boys. However, due to an invalid answer, only 110 girls were accounted for in these results. Among both genders (51.8% of girls and 52.6% of boys), the most common response is “Not sure.” This is followed by “No,” with 32.7% of girls and 32.8% of boys selecting this option. Only 13.6% of girls and 13.1% of boys reported having someone in the family interested in fossils.



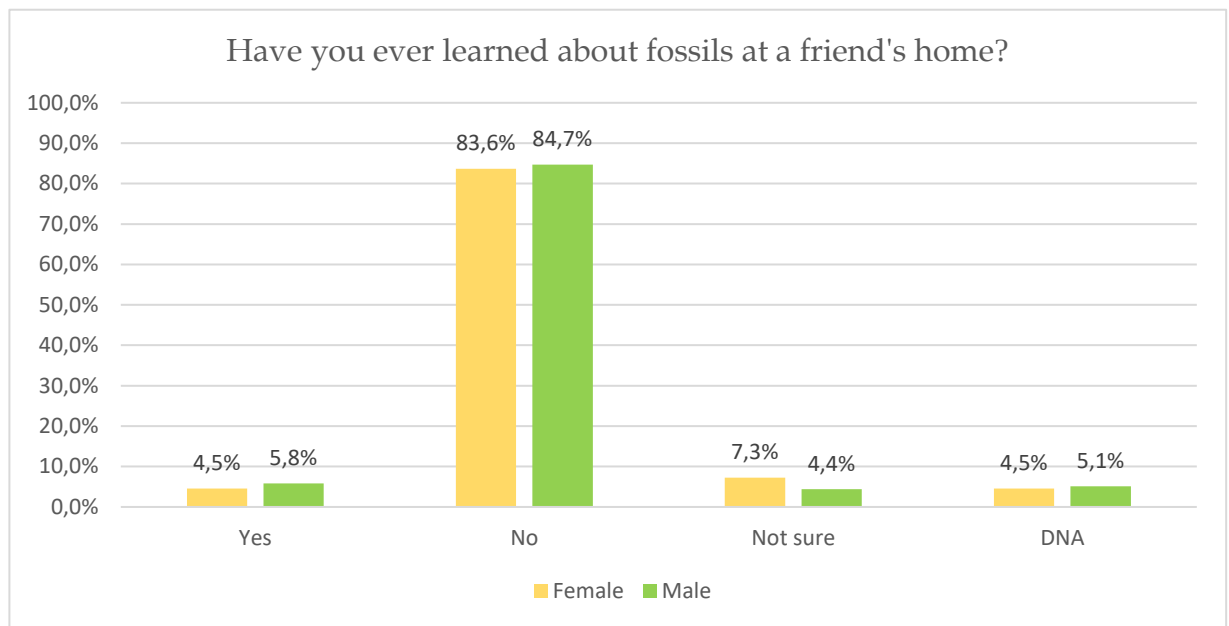
Graphic 132: Representation of the answers to question number nine of the Life Sphere Home in 1st year Irish students.

Graphic 132 represents the total sample of 1st year Irish students who completed the surveys: 111 girls and 137 boys. More than half the students (73.9% of girls and 59.1% of boys) replied that they do not look up information about fossils at home. Alternatively, 23.4% of girls and 33.6% of boys said they do, while 1.8% of girls and 5.8% of boys showed uncertainty.



Graphic 133: Representation of the answers to question number ten of the Life Sphere Home in 1st year Irish students.

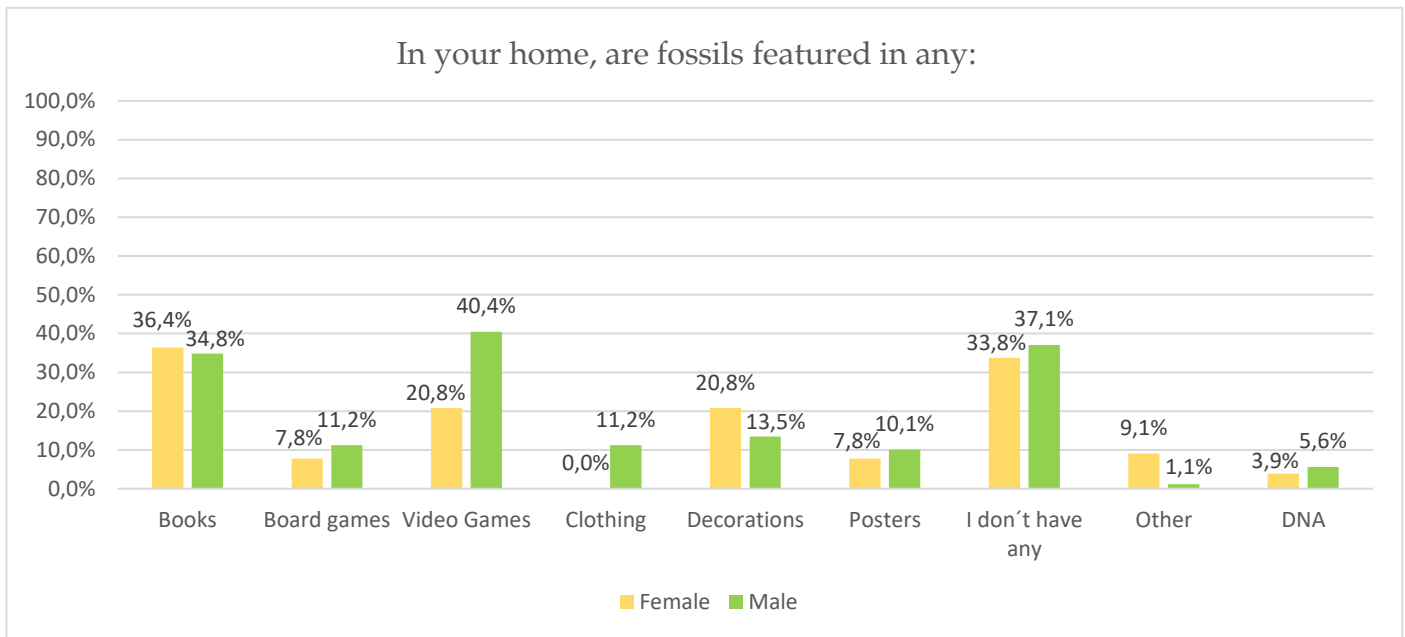
Graphic 133 focuses solely on students who answered affirmatively to question 9, totalling 26 girls and 46 boys. The most commonly cited source for both genders when seeking information about fossils is Google, with 73.1% of girls and 76.1% of boys selecting this option, followed by books for girls (57.7%) and YouTube for boys (50%). The third most selected option for girls is Documentaries (34.6%), while for boys, it was books and documentaries (45.7%). TikTok is also one of the most utilised sources, with 26.9% of girls and 37% of boys using it. In addition, 19.2% of girls and 8.7% of boys selected “Other”, citing ChatGPT, with girls also mentioning Posters and Snapchat and boys citing Netflix and internet sites.



Graphic 134: Representation of the answers to question number eleven of the Life Sphere Home in 1st year Irish students.

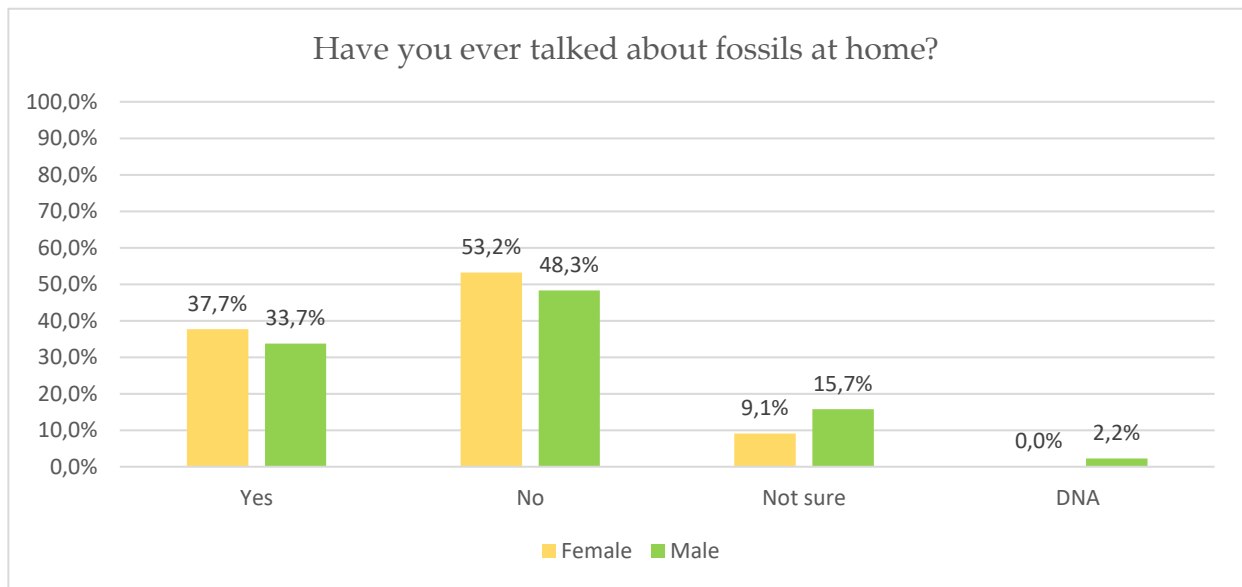
Graphic 134 illustrates the sample of 1st year Irish students who completed the surveys: 111 girls and 137 boys. However, due to 1 invalid answer, only 110 girls were accounted for. Most students (83.6% of girls and 84.7% of boys) replied that they never learned about fossils in a friend's home. Only 4.5% of girls and 5.8% of boys reported learning about the subject in a friend's place, while 7.3% of girls and 4.4% of boys expressed uncertainty.

2nd YEAR



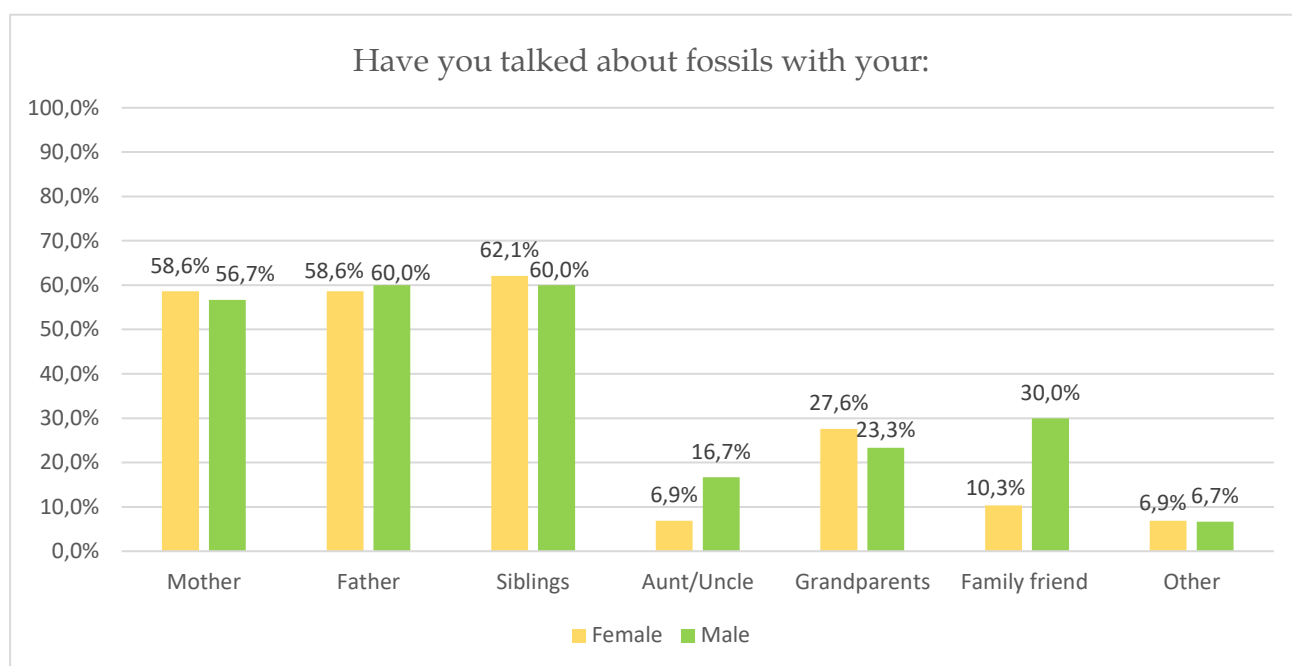
Graphic 135: Representation of the answers to question number one of the Life Sphere Home in 2nd year Irish students.

Graphic 135 focuses on 2nd year students, a sample size of 77 girls and 89 boys. The most significant finding was that books were the top choice for girls, with 36.4% selecting this option, while video games and decorations were the second most common answer for girls, with 20.8% selecting this choice. For boys, video games were the most commonly featured objects with fossils in their homes (40.4%) before books (34.8%). Decorations ranked third most common among boys (13.5%). Additionally, 33.8% of girls and 37.1% of boys emphasised the absence of fossils displayed in their homes. In the “Other” category, 9.1% of girls cited TV shows, pictures of rocks, films, jewellery and fridge magnets with 1.1% of boys adding “Era Warfare”.



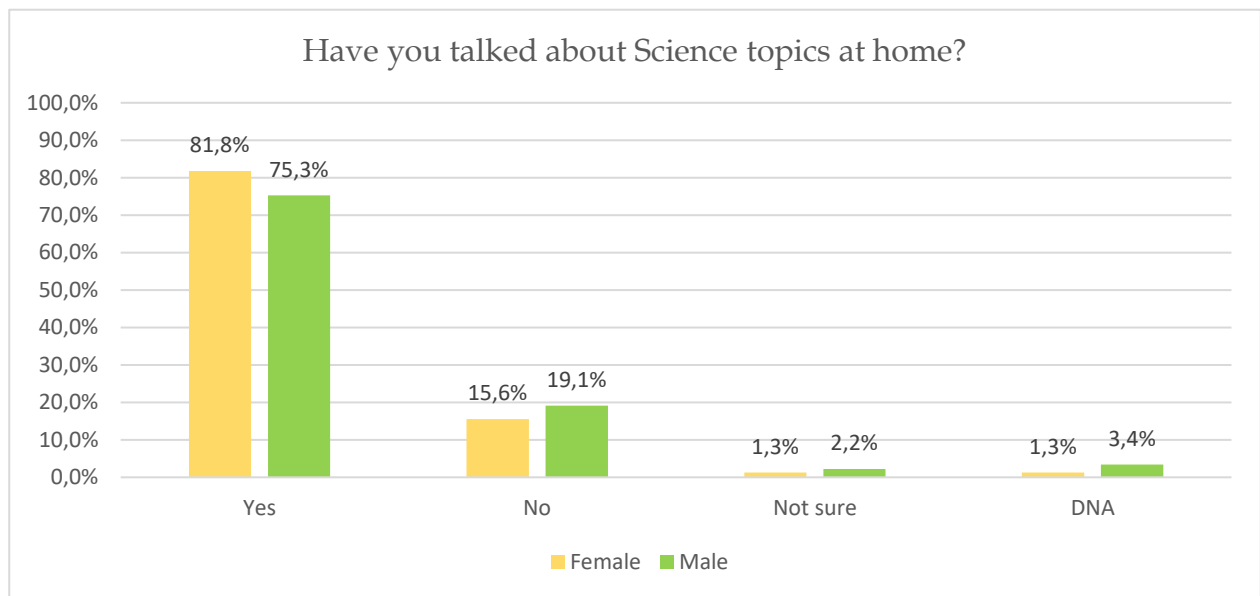
Graphic 136: Representation of the answers to question number two of the Life Sphere Home in 2nd year Irish students.

This graphic represents the sample of 2nd year female and male students, comprising 77 girls and 89 boys. Notably, the answer with the highest percentage for both genders is “No” (53.2% of girls and 48.3% of boys), with 37.7% of girls and 33.7% of boys indicating that they do discuss fossils at home, while 9.1% of girls and 15.7% of boys express uncertainty on the matter.



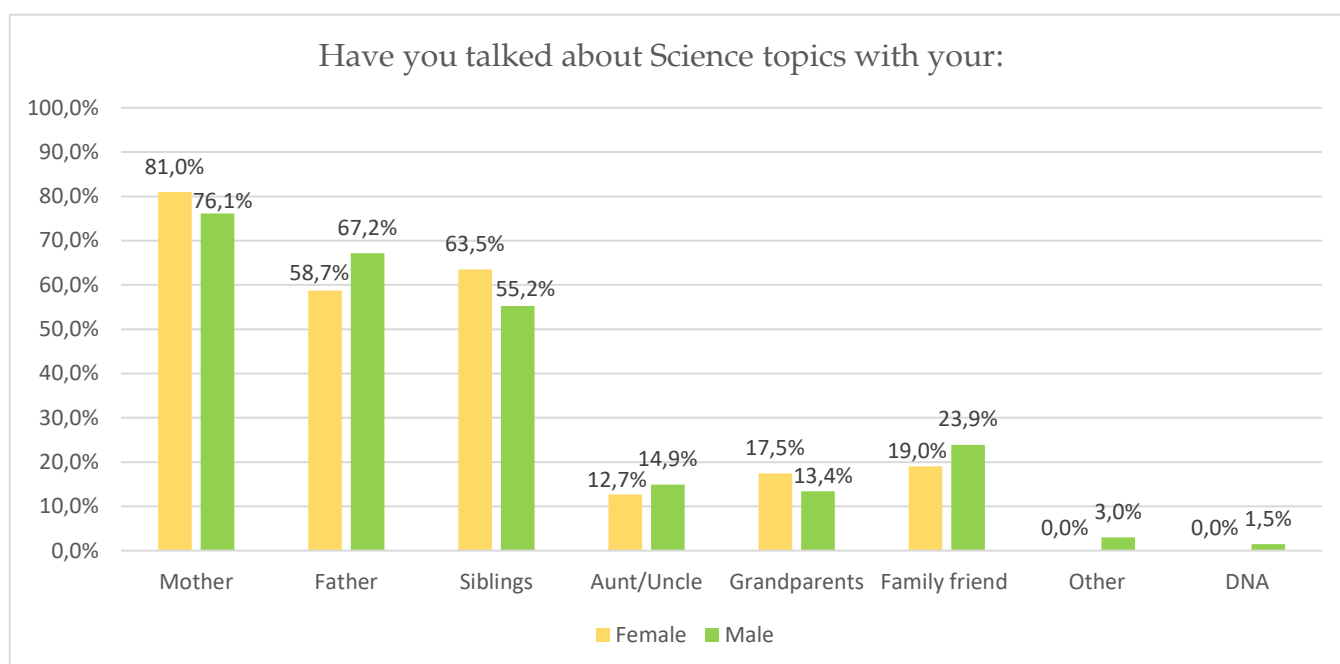
Graphic 137: Representation of the answers to question number three of the Life Sphere Home in 2nd year Irish students.

For this visual representation, the sample of students consisted of those who replied affirmatively to question 2 of the Home Life Sphere, totalling 29 girls and 30 boys. Boys (60%) talk primarily with their fathers and siblings about fossils, followed by their mothers (56.7%). For girls, siblings are the most likely family members to talk with about the subject (62.1%), followed by mother and father (58.6%). Grandparents are also members of the family who contribute to discussing this subject, with 27.6% of girls and 23.3% of boys selecting this answer; also, family friends were selected by 30% of boys and 10.3% of girls. Moreover, boys (6.7%) and girls (6.9%) added the option “Other”, with boys citing cousins and “another family member” and female students adding great-aunt and friends.



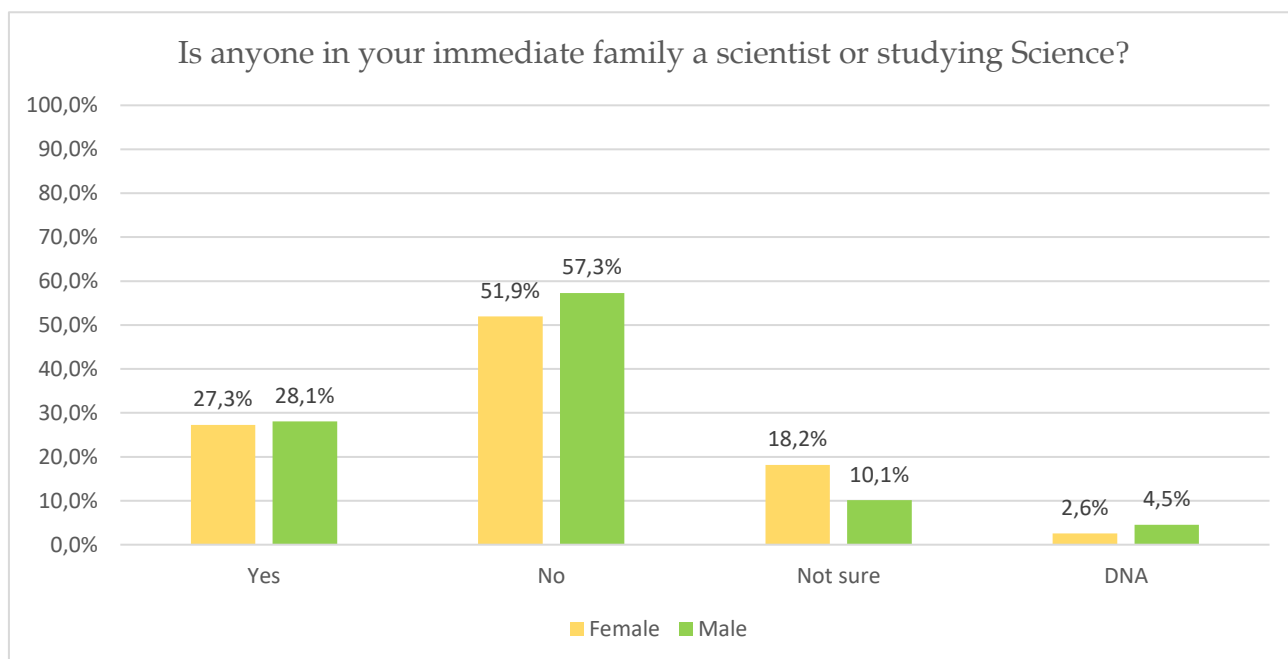
Graphic 138: Representation of the answers to question number four of the Life Sphere Home in 2nd year Irish students.

Graphic 138 displays the overall number of students who participated in the surveys: 77 girls and 89 boys. The predominant response among female and male students regarding discussing scientific topics at home is “Yes,” with 81.8% of girls and 75.3% of boys selecting this option. A percentage of 15.6% of girls and 19.1% of boys stated that they do not engage in such discussion, while 1.3% of girls and 2.2% of boys expressed uncertainty.



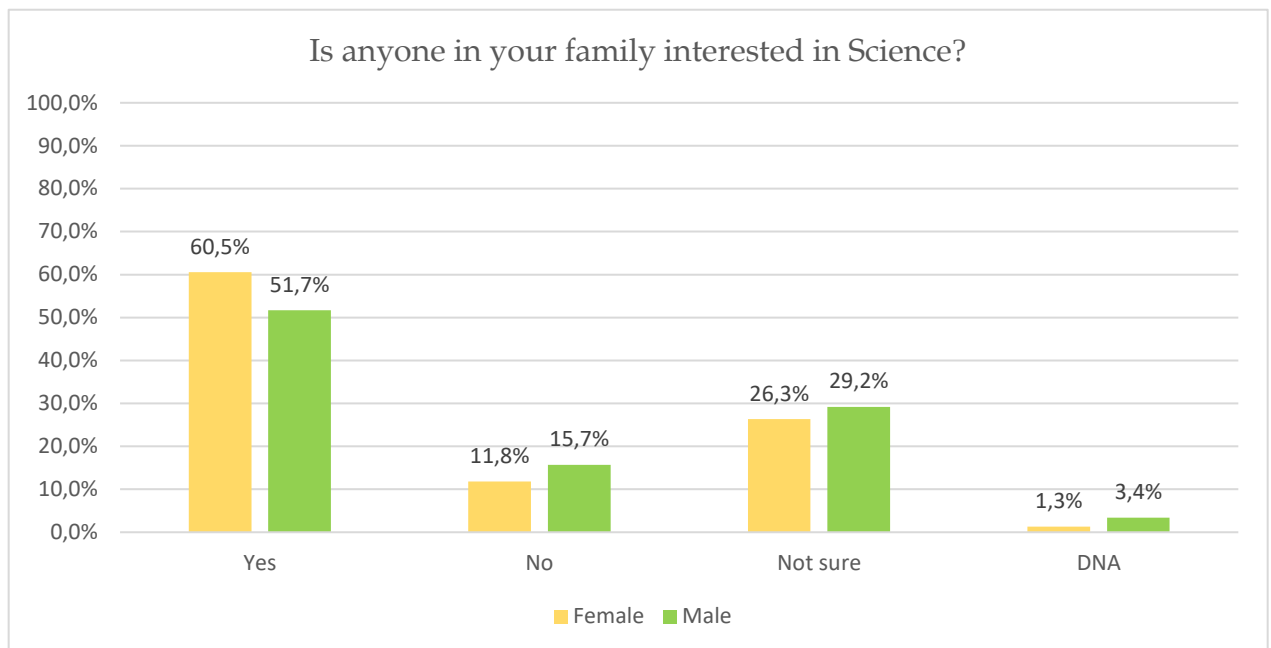
Graphic 139: Representation of the answers to question number five of the Life Sphere Home in 2nd year Irish students.

For graphic number 139, the sample of students was those who replied affirmatively to question number 4 of the Home Life Sphere, totalling 63 girls and 67 boys. Both girls (81%) and boys (76.1%) talk primarily with their mothers about Science, followed by their siblings for girls (63.5%) and fathers for boys (67.2%). Family friends also contribute to discussing this subject, with 19% of girls and 23.9% of boys selecting this option. Moreover, boys (3%) selected the option “Other”, adding cousins and “another family member” as people they engage in Science discussions with.



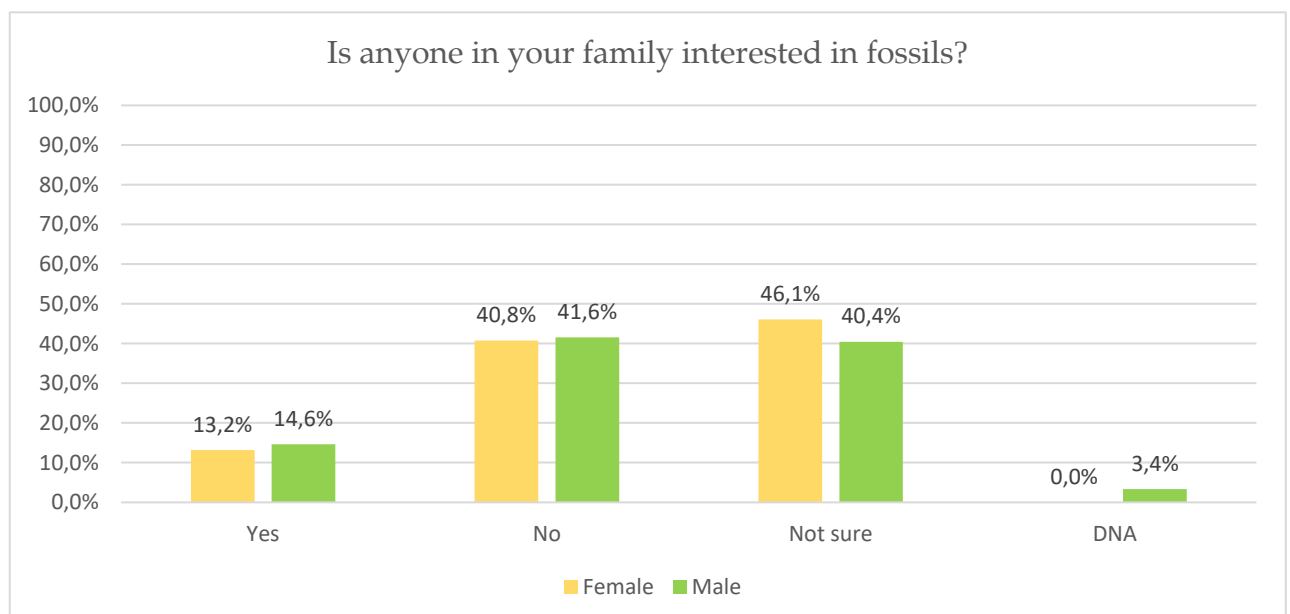
Graphic 140: Representation of the answers to question number six of the Life Sphere Home in 2nd year Irish students.

Graphic 140 represents the entire sample of 77 girls and 89 boys. The most common response to whether the students have a family member studying Science or working as a scientist for both genders was “No” with 51.9% of girls and 57.3% of boys selecting this option. This was followed by “Yes” with 27.3% of girls and 28.1% of boys selecting this option. Only 18.2% of girls and 10.1% of boys expressed uncertainty.



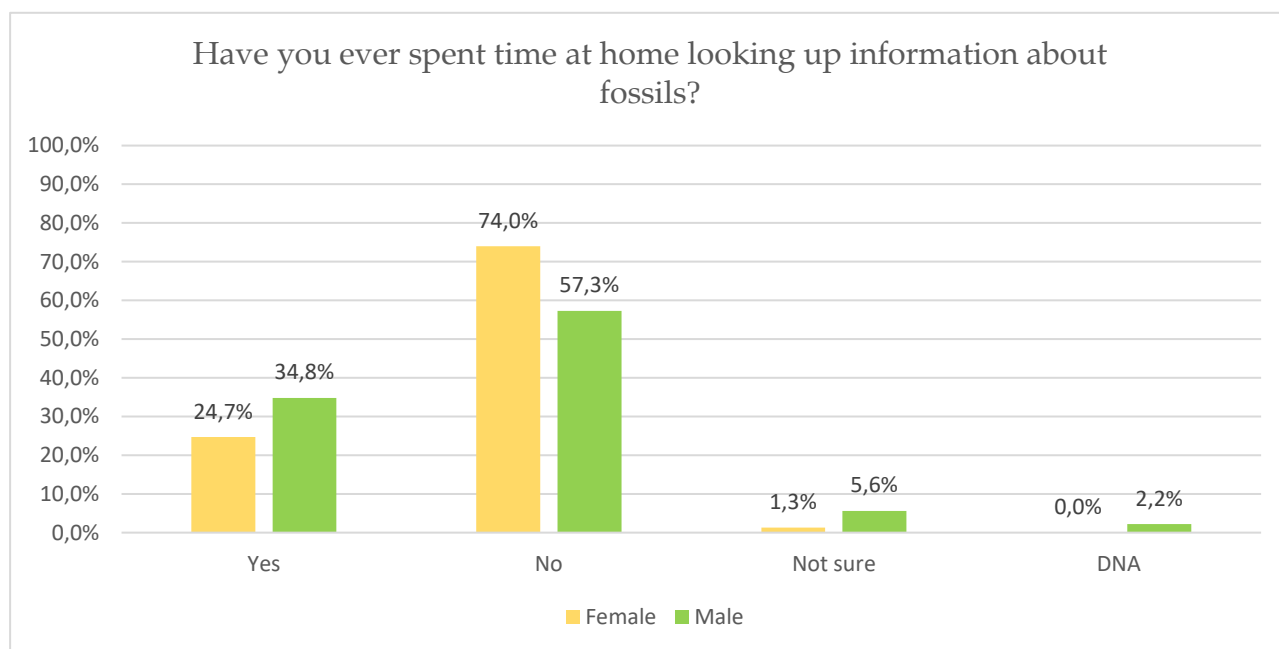
Graphic 141: Representation of the answers to question number seven of the Life Sphere Home in 2nd year Irish students.

In graphic 141 the sample of 77 girls and 89 boys is represented. However, only 76 girls were accounted for these results due to one invalid answer. The most common answer when asking if the students have someone in their family interested in Science is “Yes” for girls (60.5%) and boys (51.7%), followed by 26.3% of female students and 29.2% of male students not knowing, and 11.8% of girls and 15.7% of boys replying “No”.



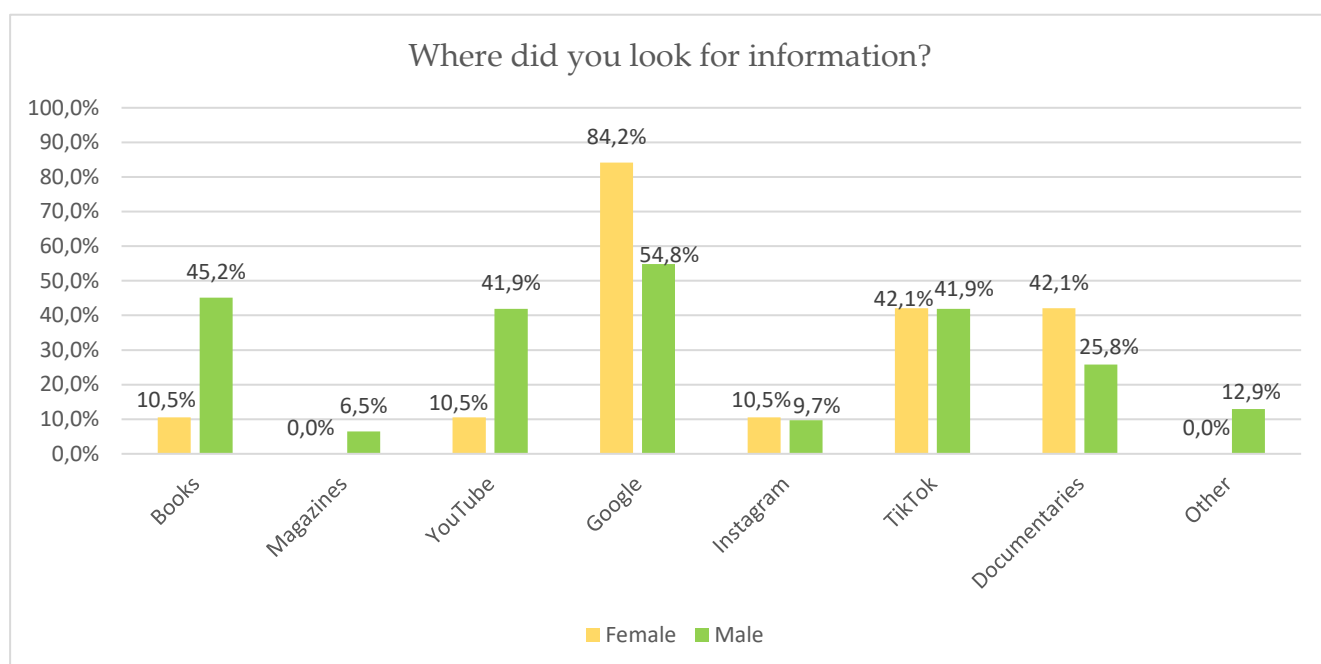
Graphic 142: Representation of the answers to question number eight of the Life Sphere Home in 2nd year Irish students.

Graphic 142 represents the total sample of 2nd year Irish students who completed the surveys: 77 girls and 89 boys. However, only 76 girls were accounted for these results due to an invalid answer. Among girls (46.1%), the most common response is “Not sure”, followed by “No” with 40.8%. For boys, 41.6% replied “No”, and 40.4% replied with uncertainty. Only 13.2% of girls and 14.6% of boys reported having someone in the family interested in fossils.



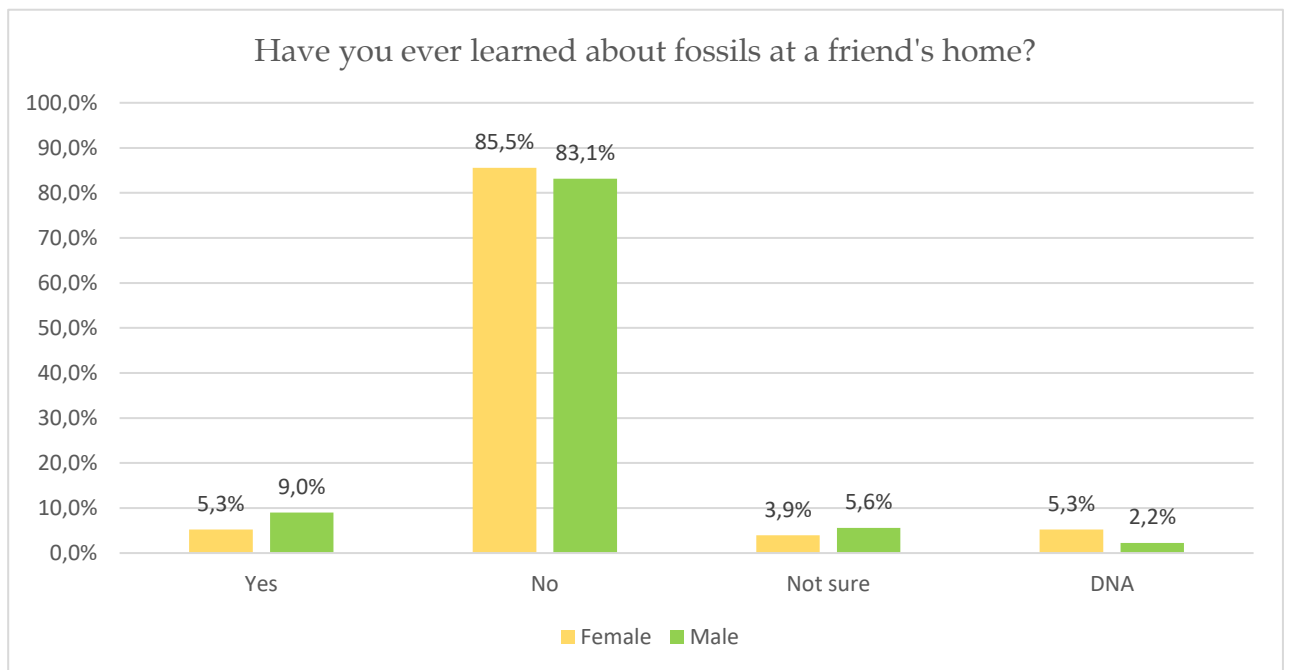
Graphic 143: Representation of the answers to question number nine of the Life Sphere Home in 2nd year Irish students.

Graphic 143 represents the total sample of 2nd year Irish students who completed the surveys: 77 girls and 89 boys. More than half the students (74% of girls and 57.3% of boys) replied that they do not look up information about fossils at home. Moreover, 24.7% of girls and 34.8% of boys said they do, while 1.3% of girls and 5.6% of boys replied, “Not sure”.



Graphic 144: Representation of the answers to question number ten of the Life Sphere Home in 2nd year Irish students.

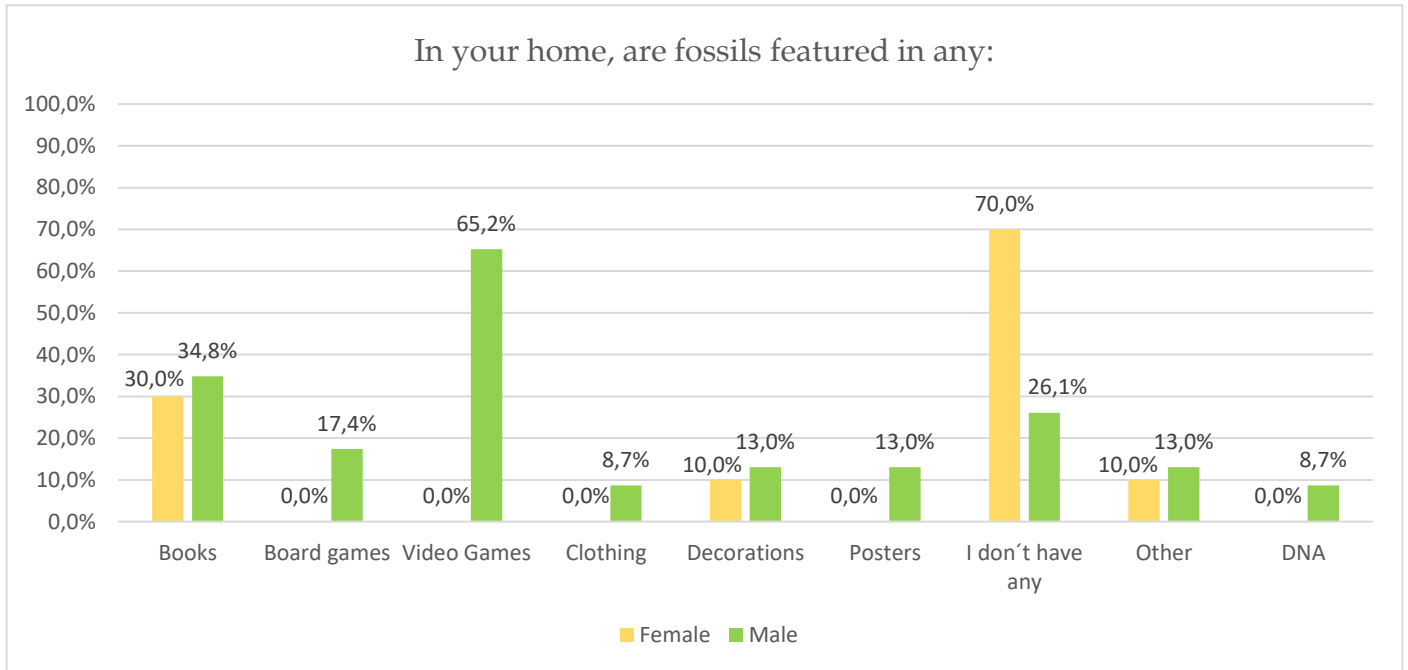
Graphic 144 focuses solely on students who answered affirmatively to question number 9, totalling 19 girls and 31 boys. The most commonly cited source for both genders when seeking information about fossils is Google, with 84.2% of girls and 54.8% of boys selecting this option, followed by TikTok and Documentaries for girls (42.1%). In comparison, for boys, the second most common answer was books (45.2%), followed by YouTube and TikTok (41.9%). In addition, 12.9% of boys selected "Other", citing ChatGPT, Pinterest and internet sites.



Graphic 145: Representation of the answers to question number eleven of the Life Sphere Home in 2nd year Irish students.

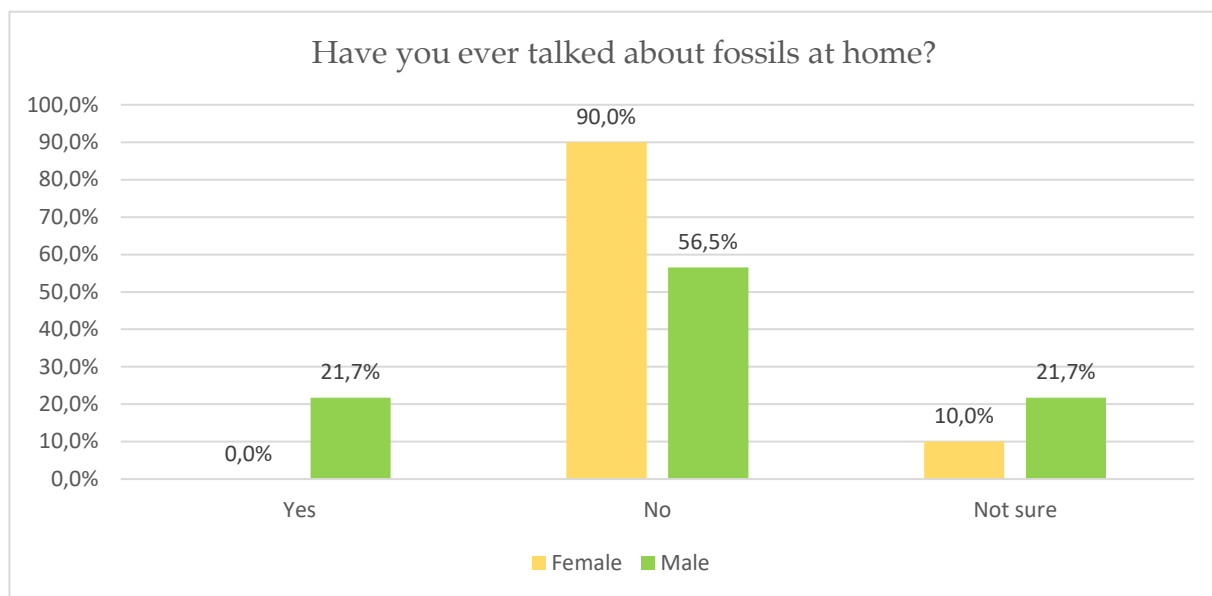
Graphic 145 illustrates the sample of 2nd year Irish students who completed the surveys: 77 girls and 89 boys. However, due to 1 invalid answer, only 76 girls were accounted for these results. Most students (85.5% of girls and 83.1% of boys) replied that they never learned about fossils in a friend's home. Only 5.3% of girls and 9% of boys reported learning about the subject in a friend's place, while 3.9% of girls and 5.6% of boys expressed uncertainty.

3rd YEAR



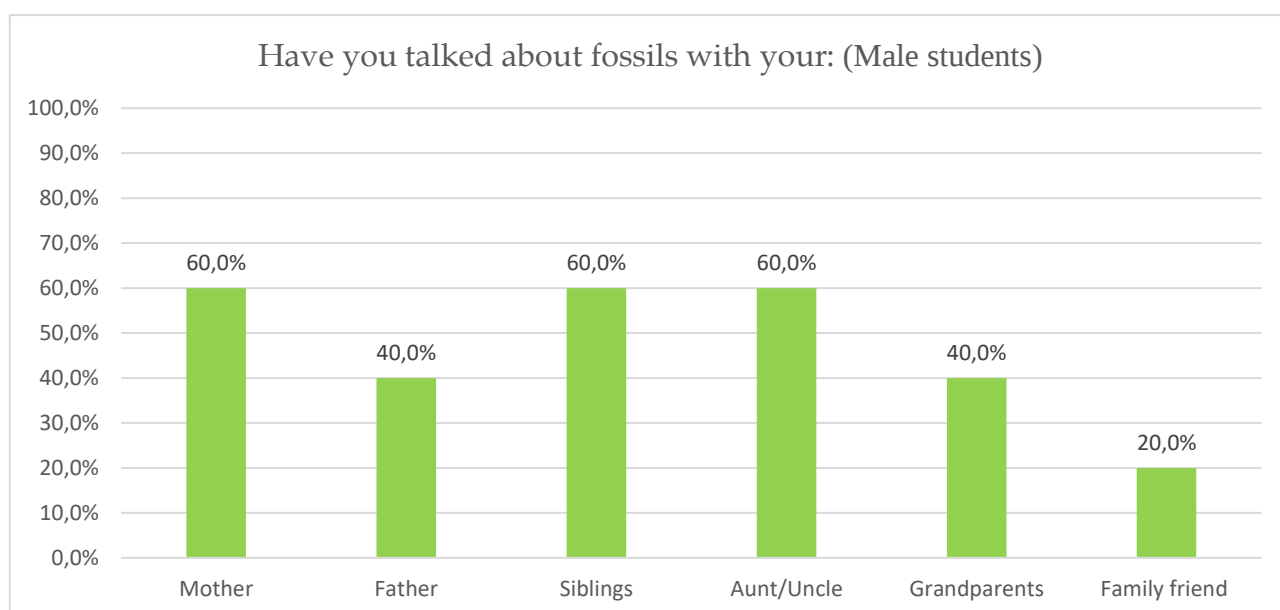
Graphic 146: Representation of the answers to question number one of the Life Sphere Home in 3rd year Irish students.

Graphic 146 focuses on 3rd year students, a sample size of 10 girls and 23 boys. The most significant finding was that for 65.2% of boys, video games are the objects with the most featured fossils, with books being the second most common choice for boys (34.8%) and the top choice for girls (30%). For 17.4% of boys, board games are also popular and for 10% of girls and 13% of boys decorations also featured fossils at home. Additionally, 70% of girls and 26.1% of boys emphasised the absence of fossils displayed in their homes. In the “Other” category, 10% of girls cited movies, and 13% of boys added the TV shows Friends and Fortnight.



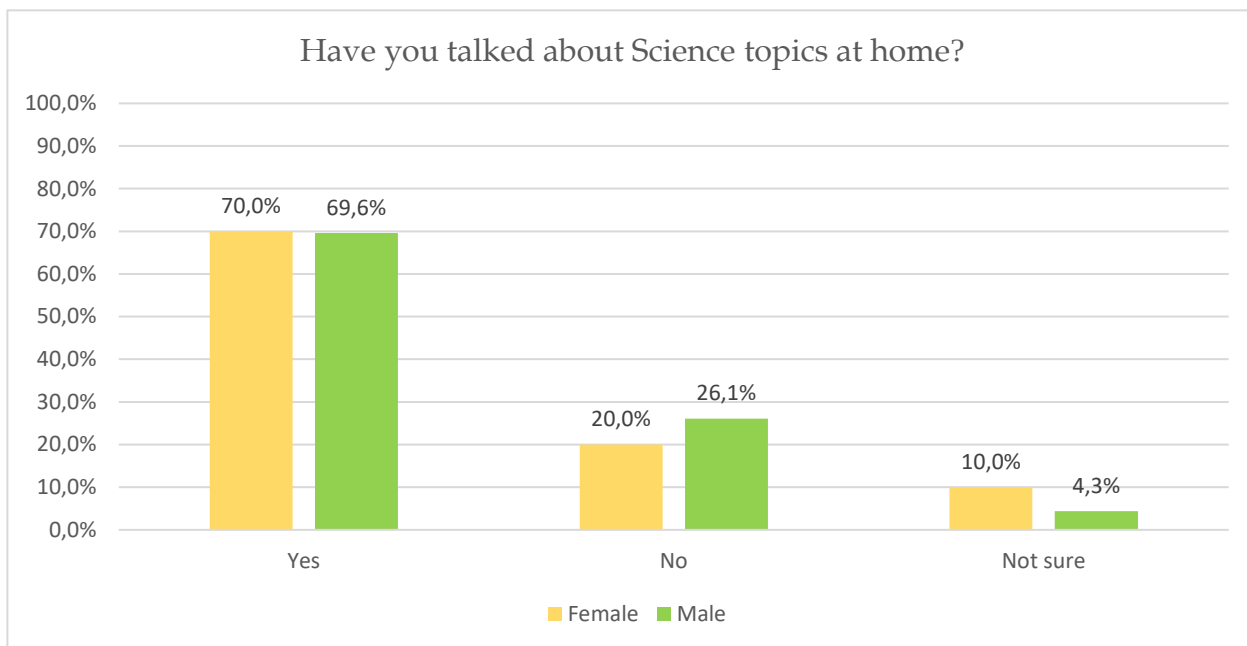
Graphic 147: Representation of the answers to question number two of the Life Sphere Home in 3rd year Irish students.

This graphic represents the sample of 3rd year female and male students, comprising 10 girls and 23 boys. Notably, the answer with the highest percentage for both genders is “No” (90% for girls and 56.5% for boys), with just 21.7% of boys indicating that they do discuss fossils at home. Meanwhile, 10% of girls and 21.7% of boys express uncertainty on the matter.



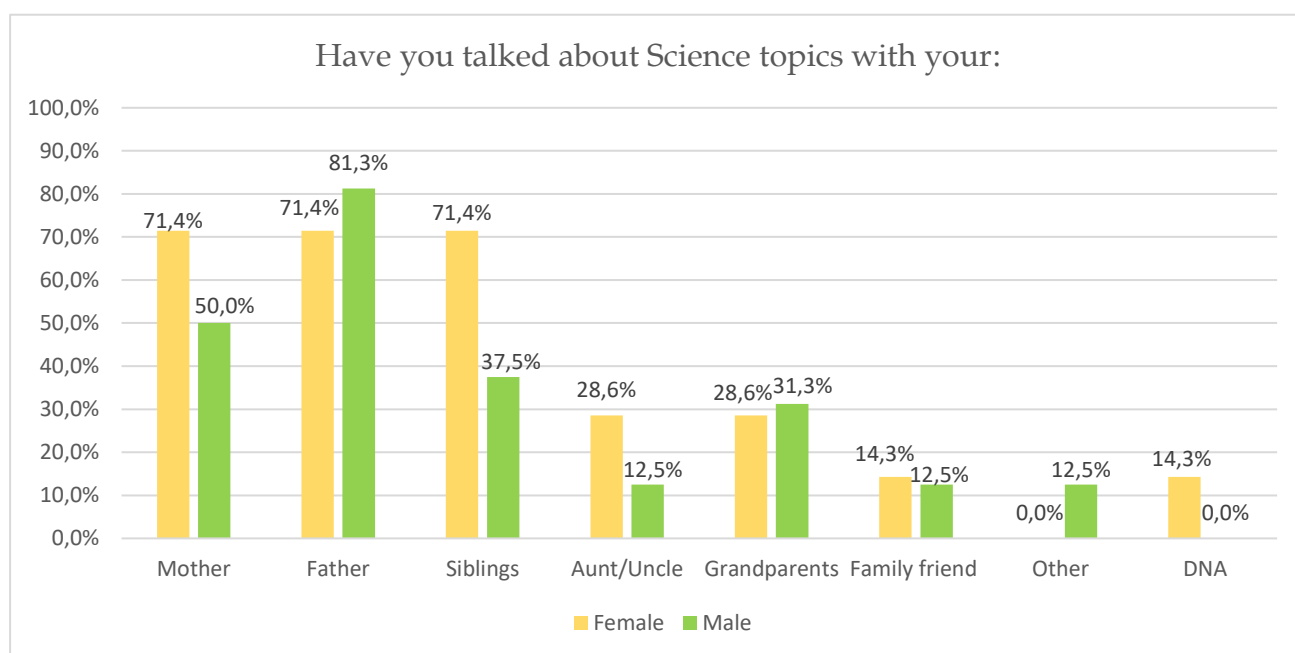
Graphic 148: Representation of the answers to question number three of the Life Sphere Home in 3rd year Irish students.

For this visual representation, the sample of students consisted of those who replied affirmatively to question 2 of the Home Life Sphere, which consisted of 5 boys. Boys (60%) primarily talk with their mothers, siblings, and aunts/uncles about fossils, followed by their fathers and grandparents (40%). Family friends were selected by 20% of the students.



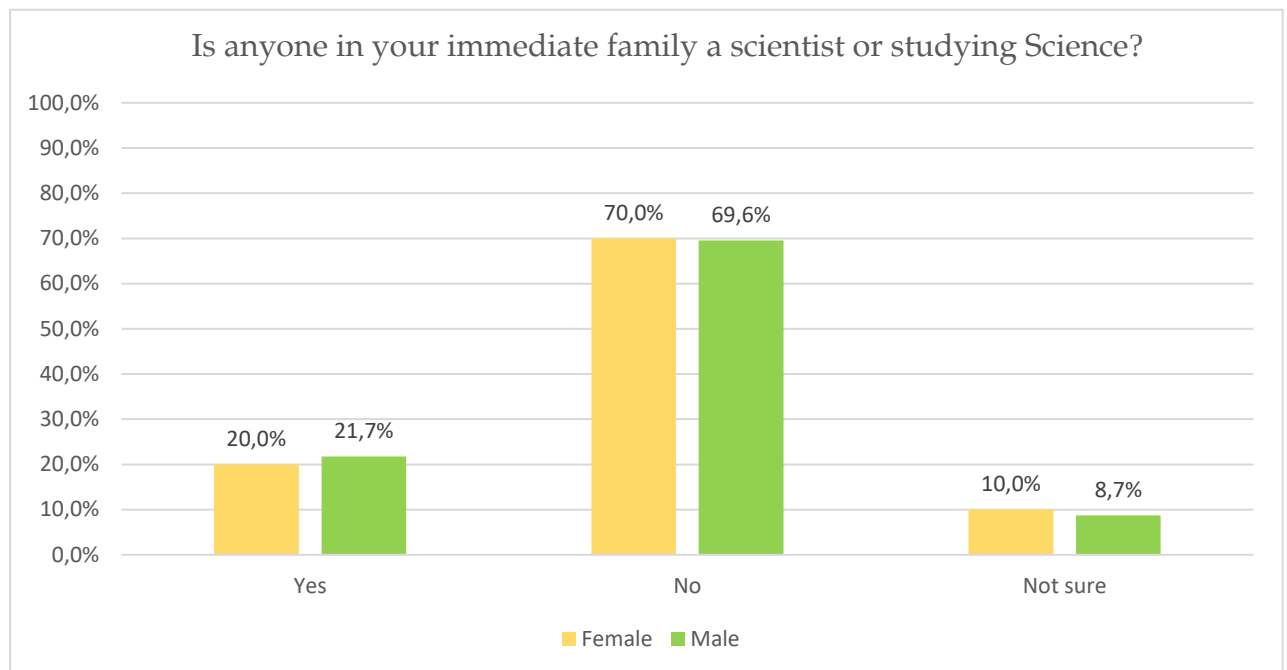
Graphic 149: Representation of the answers to question number four of the Life Sphere Home in 3rd year Irish students.

Graphic 149 displays the overall number of students who participated in the surveys: 10 girls and 23 boys. The predominant response among female and male students regarding discussing scientific topics at home is "Yes," with 70% of girls and 69.6% of boys selecting this option. Moreover, 20% of girls and 26.1% of boys stated that they do not engage in such discussions, while 10% of girls and 4.3% of boys expressed uncertainty.



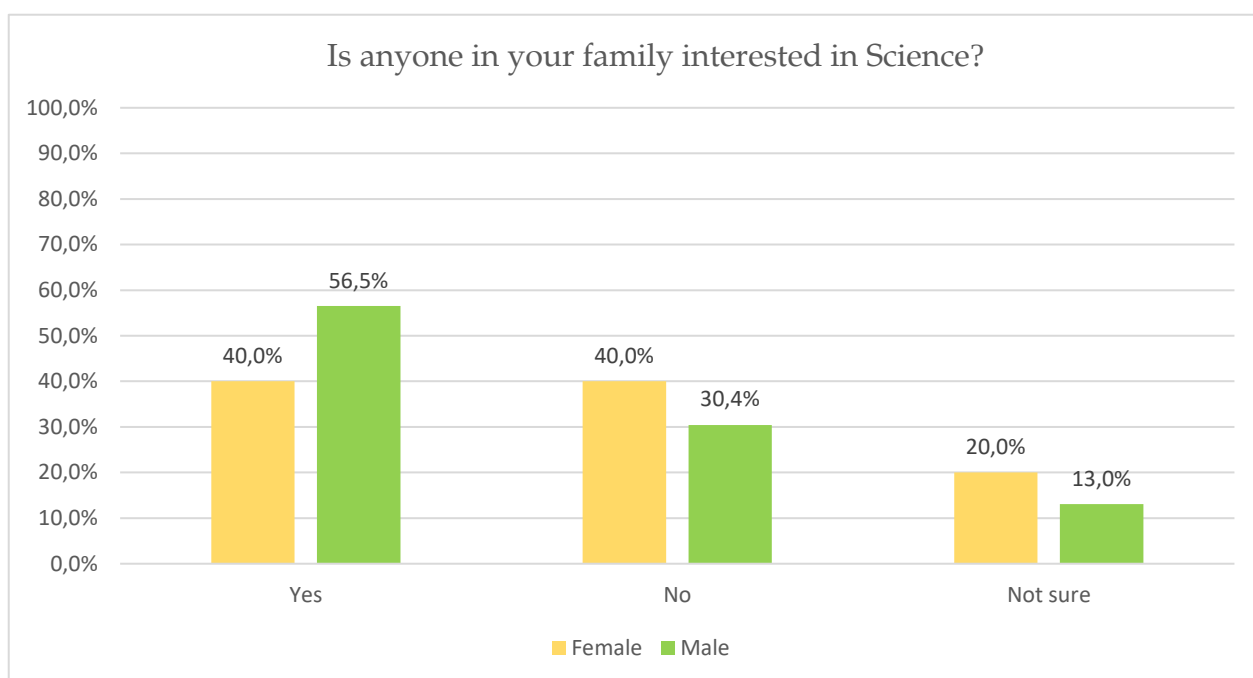
Graphic 150: Representation of the answers to question number five of the Life Sphere Home in 3rd year Irish students.

Graphic number 150, the sample of students was those who replied affirmatively to question number 4 of the Home Life Sphere, totalling 7 girls and 16 boys. For 81.3% of boys, the father is the family member with whom they speak most of the time about Science, while for girls (71.4%), the percentages are equal with the father, mother and siblings. Grandparents also contribute to discussing this subject, with 28.6% of girls and 31.3% of boys selecting this option, and the same percentage of girls (28.6%) also discuss scientific topics with their aunts/uncles compared to 12.5% of boys. Moreover, 12.5% of the boys selected "Other" and added friends.



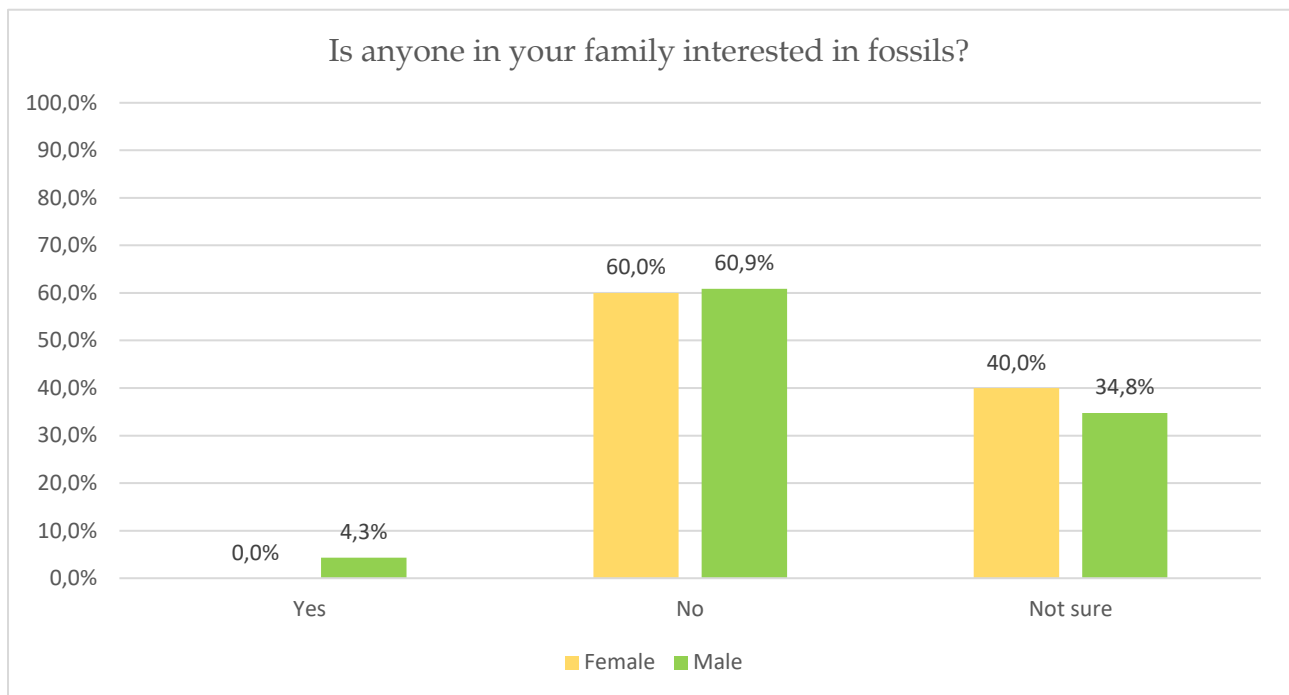
Graphic 151: Representation of the answers to question number six of the Life Sphere Home in 3rd year Irish students.

Graphic 151 represents the entire sample of 10 girls and 23 boys. The most common response to whether the students have a family member studying Science or working as a scientist for both genders was “No” with 70% of girls and 69.6% of boys selecting this option. This was followed by “Yes” with 20% of girls and 21.7% of boys selecting this answer. Furthermore, 10% of girls and 8.7% of boys expressed uncertainty.



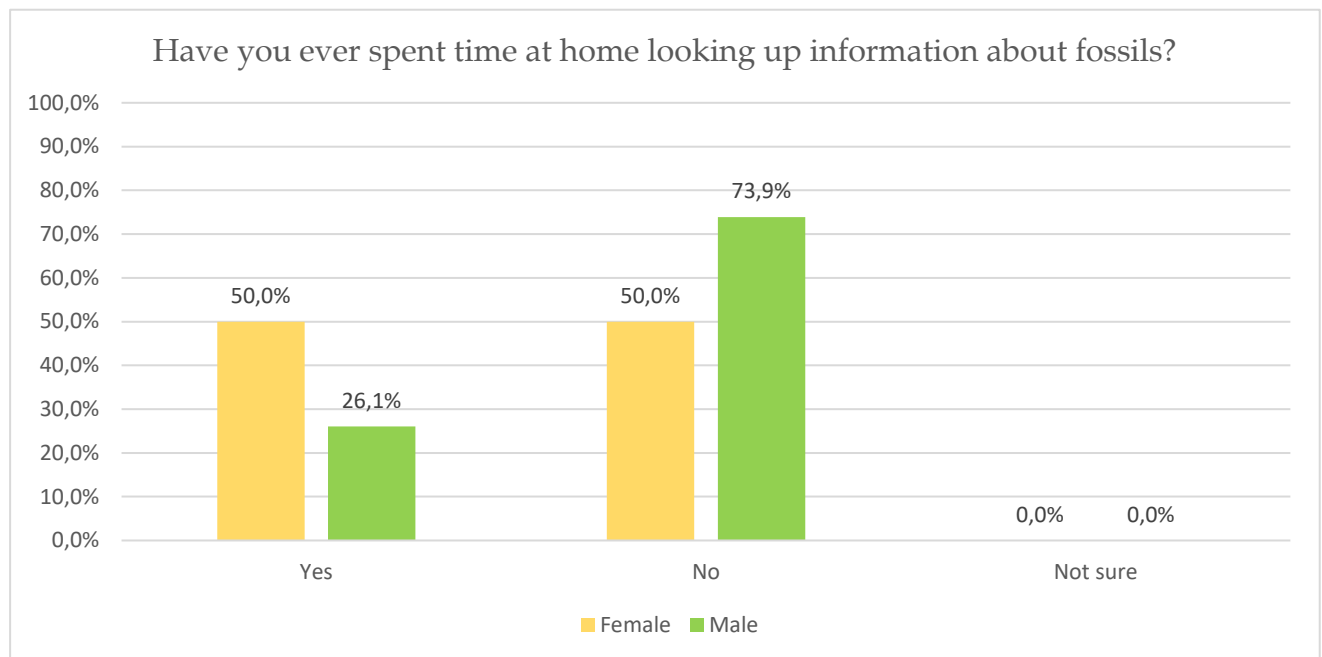
Graphic 152: Representation of the answers to question number seven of the Life Sphere Home in 3rd year Irish students.

In graphic 152, the sample of 10 girls and 23 boys is represented. The most common answers when asked if the students have someone in their family interested in Science are “Yes” for boys (56.5%) and 40% for girls. With “No” responses for girls (40%) and 30.4% for boys. This is followed by 20% of female students and 13% of male students who were unsure.



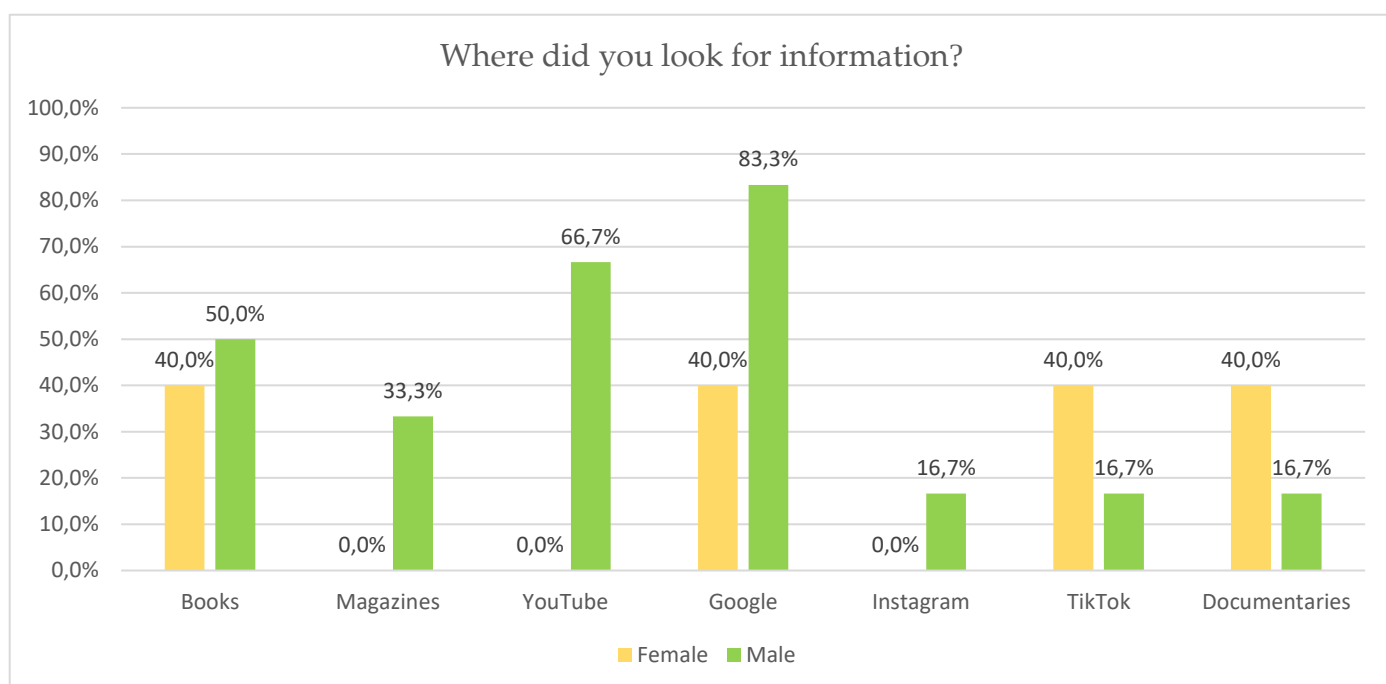
Graphic 153: Representation of the answers to question number eight of the Life Sphere Home in 3rd year Irish students.

Graphic 153 represents the total sample of 3rd year Irish students who completed the surveys: 10 girls and 23 boys. The most common response when asked if anyone in their family is interested in fossils is “No”, with 60% of girls and 60.9% of boys selecting this option. Following uncertainty (40% for girls and 34.8% for boys), only 4.3% of boys reported having someone in the family interested in fossils.



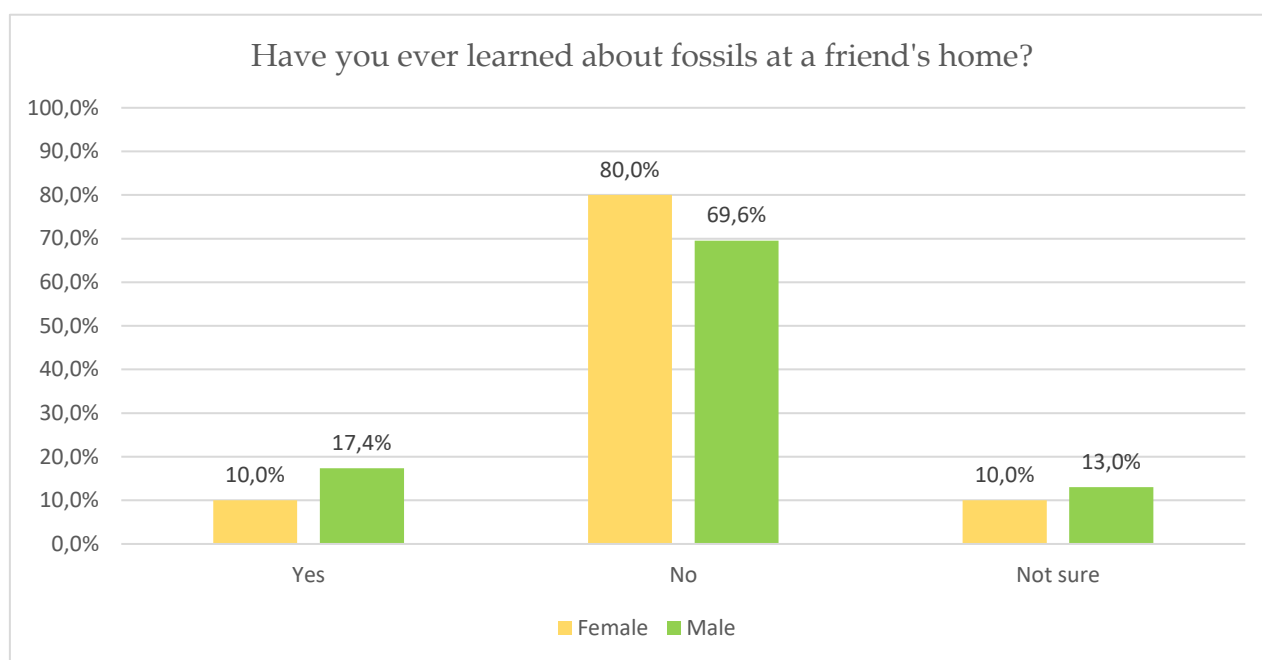
Graphic 154: Representation of the answers to question number nine of the Life Sphere Home in 3rd year Irish students.

Graphic 154 represents the total sample of 3rd year Irish students who completed the surveys: 10 girls and 23 boys. For boys (73.9%), the most common answer is “No”, while for girls, half selected the same option (50%), and the other half (50%) replied that they do look up information about fossils at home compared with just 26.1% of boys.



Graphic 155: Representation of the answers to question number ten of the Life Sphere Home in 3rd year Irish students.

Graphic 155 focuses solely on students who answered affirmatively to question number 9, totalling 5 girls and 6 boys. The most commonly cited source for both genders when seeking information about fossils is Google, with 83.3% of boys and 40% of girls selecting this option. The same percentage of girls (40%) also selected books, TikTok and documentaries. The second most common source for male students to look for information about fossils is YouTube (66.7%), followed by books (50%) and magazines (33.3%).

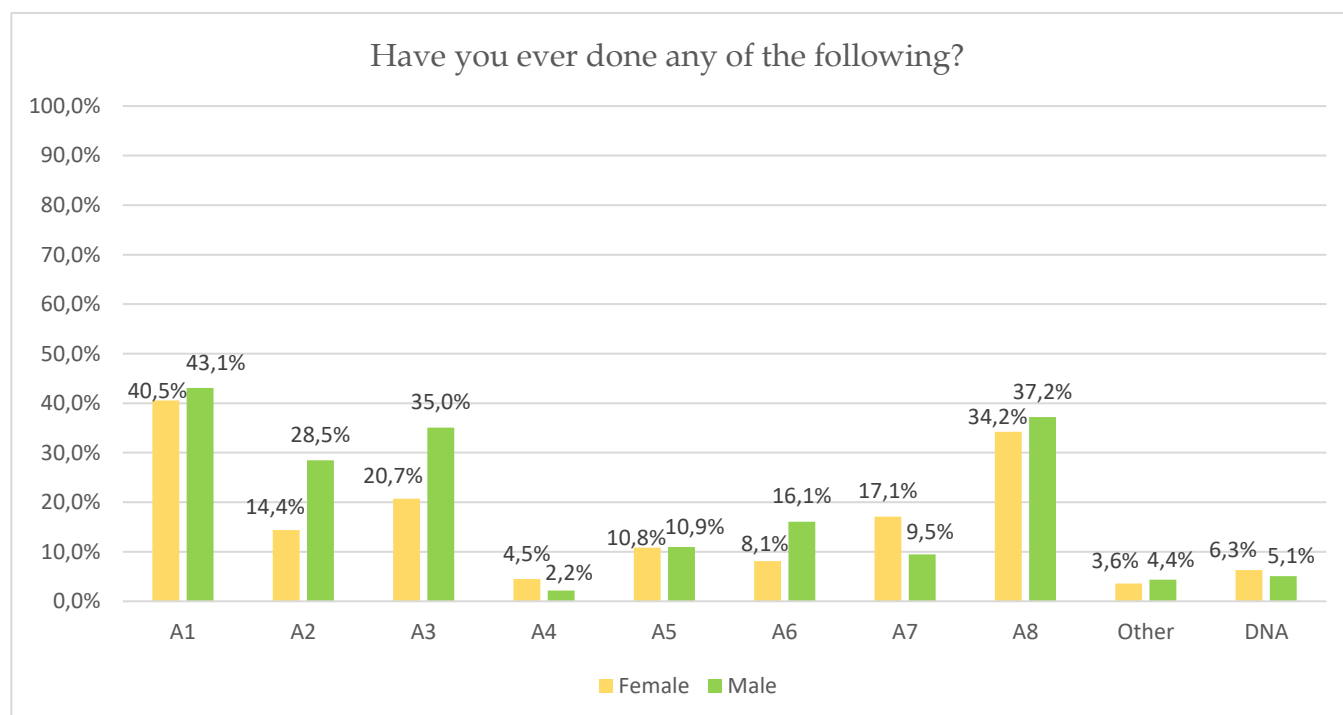


Graphic 156: Representation of the answers to question number eleven of the Life Sphere Home in 3rd year Irish students.

Graphic 156 illustrates the sample of 3rd year Irish students who completed the surveys: 10 girls and 23 boys. Most students (80% of girls and 69.6% of boys) replied that they never learned about fossils in a friend's home. Only 10% of girls and 17.4% of boys reported learning about the subject in a friend's place, with the remaining 10% of girls and 13% of boys expressing uncertainty.

Annexe IX - Graphics from survey results: Ireland Life Sphere Broader Society

1st YEAR



Graphic 157: Representation of the answers to question number one of the Life Sphere Broader Society in 1st year Irish students.

Description

A1 Watch a TV programme or documentary about palaeontology

A2 Watch a YouTube video about palaeontology

A3 Watch a film about palaeontology

A4 Listened to a podcast about palaeontology

A5 Listened to someone talk about palaeontology on the radio

A6 Used apps or games on your phone, tablet and/or computer about palaeontology

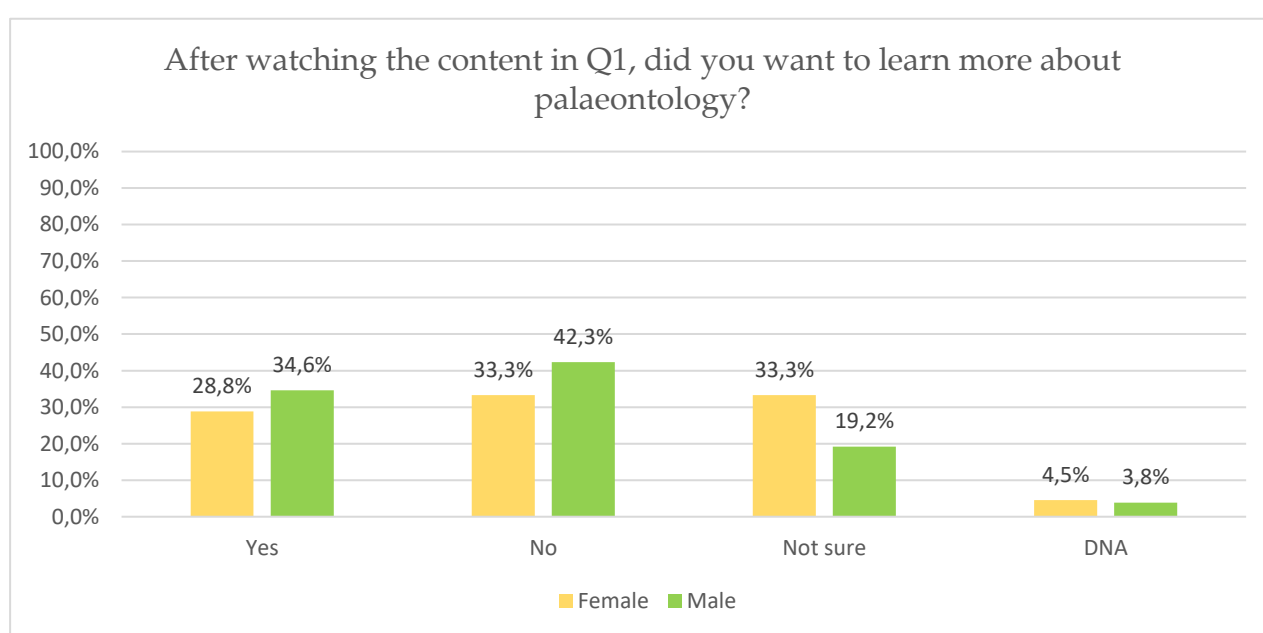
A7 Watch someone give a talk about palaeontology

A8 None of the above

DNA: Did Not Answer

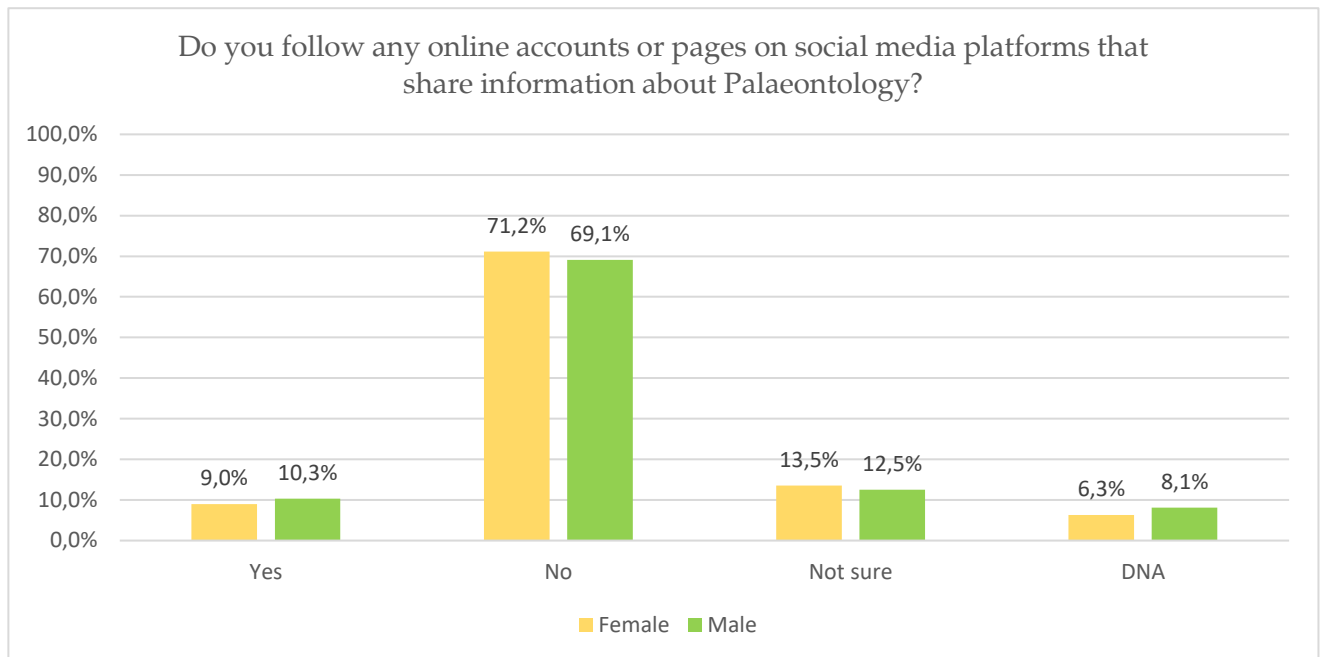
Graphic 157 represents the sample of 1st year female and male students, comprising 111 girls and 137 boys. The majority of the sample, with 34.2% of girls and 37.2% of boys, reported never participating in any activity related to Palaeontology. Among those who did, 40.5% of girls and 43.1% of boys watched a television programme or documentary. Watching a film is also

common for both genders (20.7% of girls and 35% of boys). The third most common activity for boys (28.5%) was watching a YouTube video, while for girls (17.1%) was watching someone give a talk about Palaeontology. Less commonly chosen activities include listening to a podcast, with only 4.5% of girls and 2.2% of boys selecting this answer, and listening to someone talk about Palaeontology on the radio (10.8% of girls and 10.9% of boys). Notably, 3.6% of girls and 4.4% of boys selected the option “Other”, adding reading books about the subject, with girls also mentioning talking with family members who love fossils, and boys adding watching TikTok videos, visiting museums and the Valentia trackway.



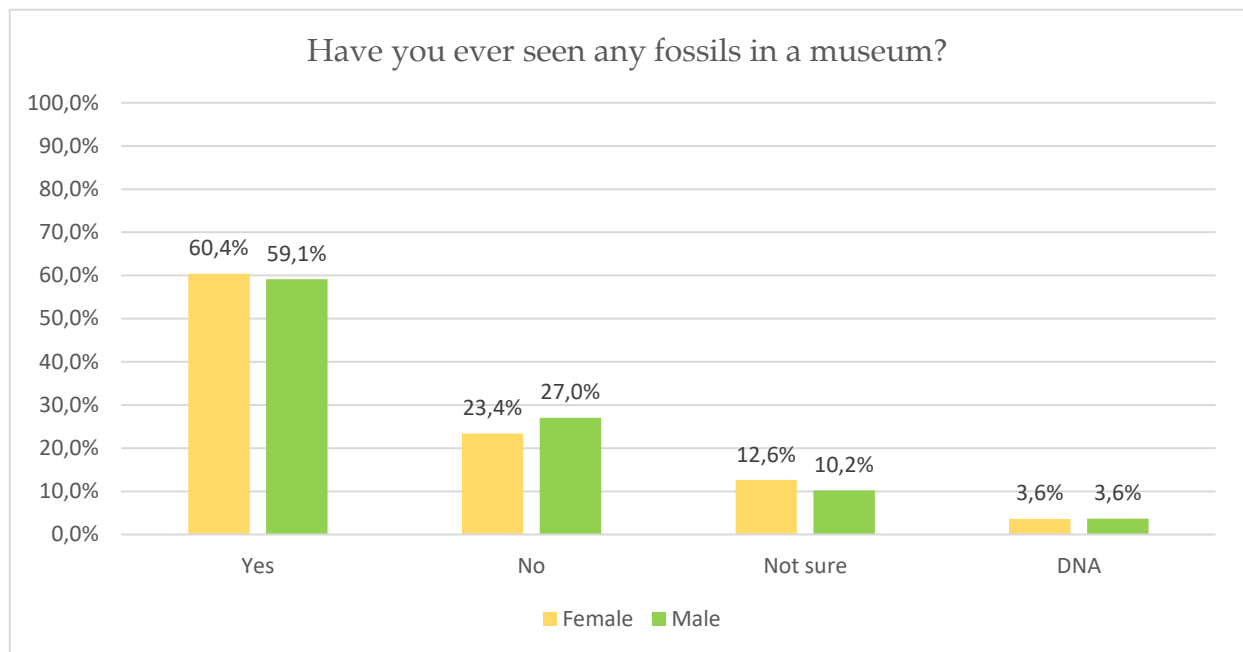
Graphic 158: Representation of the answers to question number two of the Life Sphere Broader Society in 1st year Irish students.

For this graphic, the sample comprises students who responded to question 1, consisting of those who have participated in activities related to palaeontology, totalling 66 girls and 79 boys. However, only 78 boys will be accounted for due to an invalid answer. Notably, 33.3% of girls and 42.3% of boys have not learned something new regarding palaeontology when participating in palaeontologic activities, while only 28.8% of girls and 34.6% of boys mentioned that they did and 33.3% of girls and 19.2% of boys expressing uncertainty.



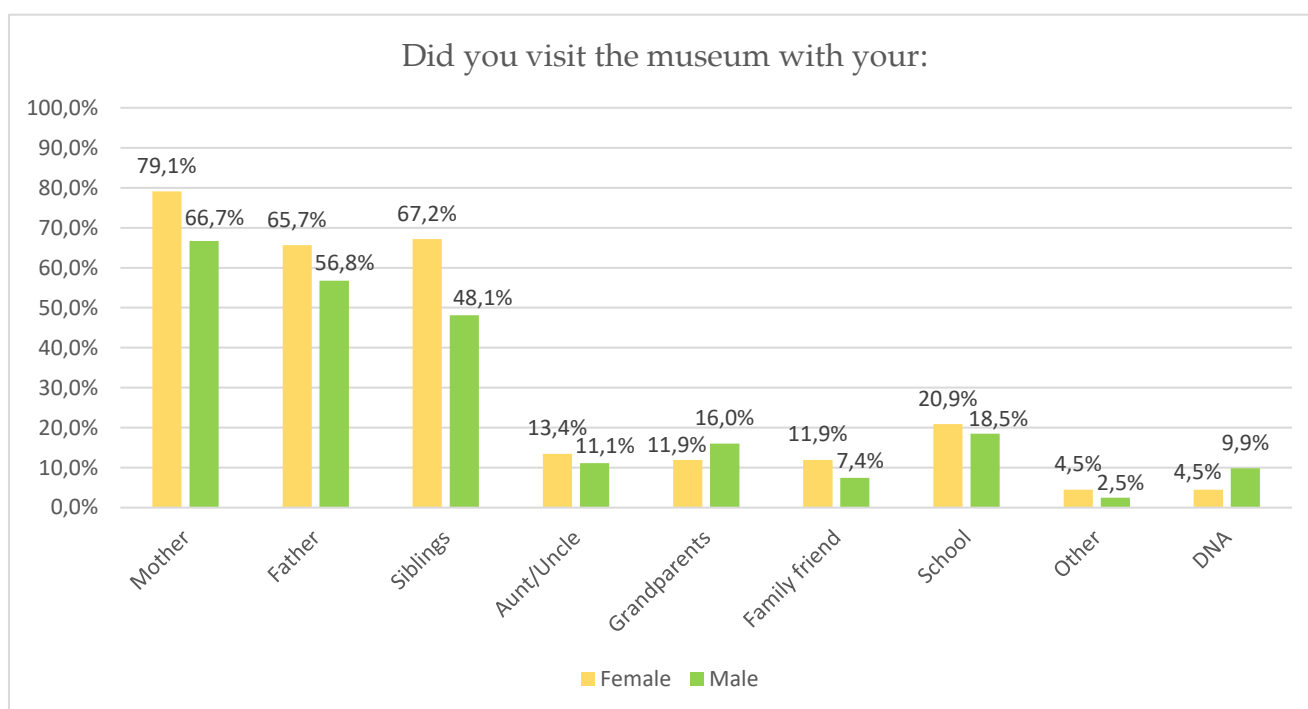
Graphic 159: Representation of the answers to question number three of the Life Sphere Broader Society in 1st year Irish students.

This graphic represents the sample of 1st year female and male students, comprising 111 girls and 137 boys. Notably, the answer with the biggest percentage for both genders is “No” (71.2% of girls and 69.1% of boys). Only 9% of girls and 10.3% of boys indicate that they follow online accounts or social media pages about Palaeontology, while 13.5% of girls and 12.5% of boys express uncertainty.



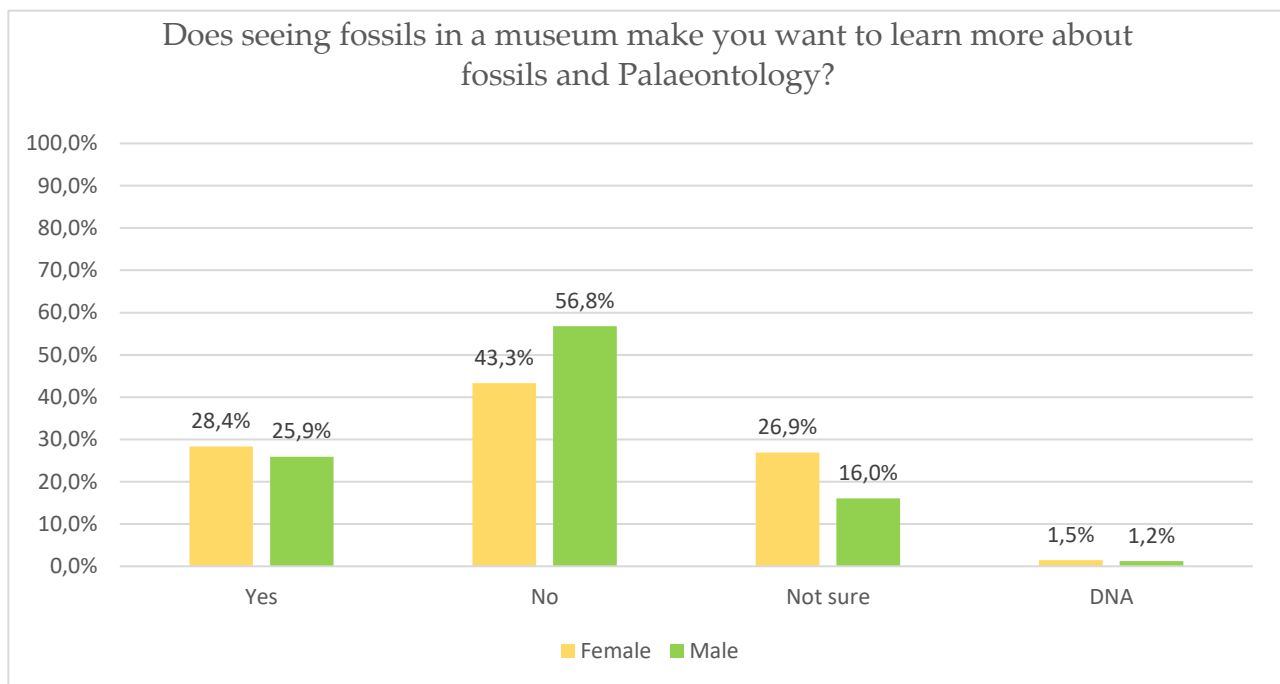
Graphic 160: Representation of the answers to question number four of the Life Sphere Broader Society in 1st year Irish students.

Graphic 160 displays the overall count of students who participated in the surveys: 111 girls and 137 boys. The predominant response among female and male students when asked if they have ever seen fossils in a museum is “Yes”, with 60.4% of girls and 59.1% of boys selecting this option. A smaller percentage of 23.4% of girls and 27% of boys, stated that they had never seen fossils exposed in a museum, while 12.6% of girls and 10.2% of boys expressed uncertainty.



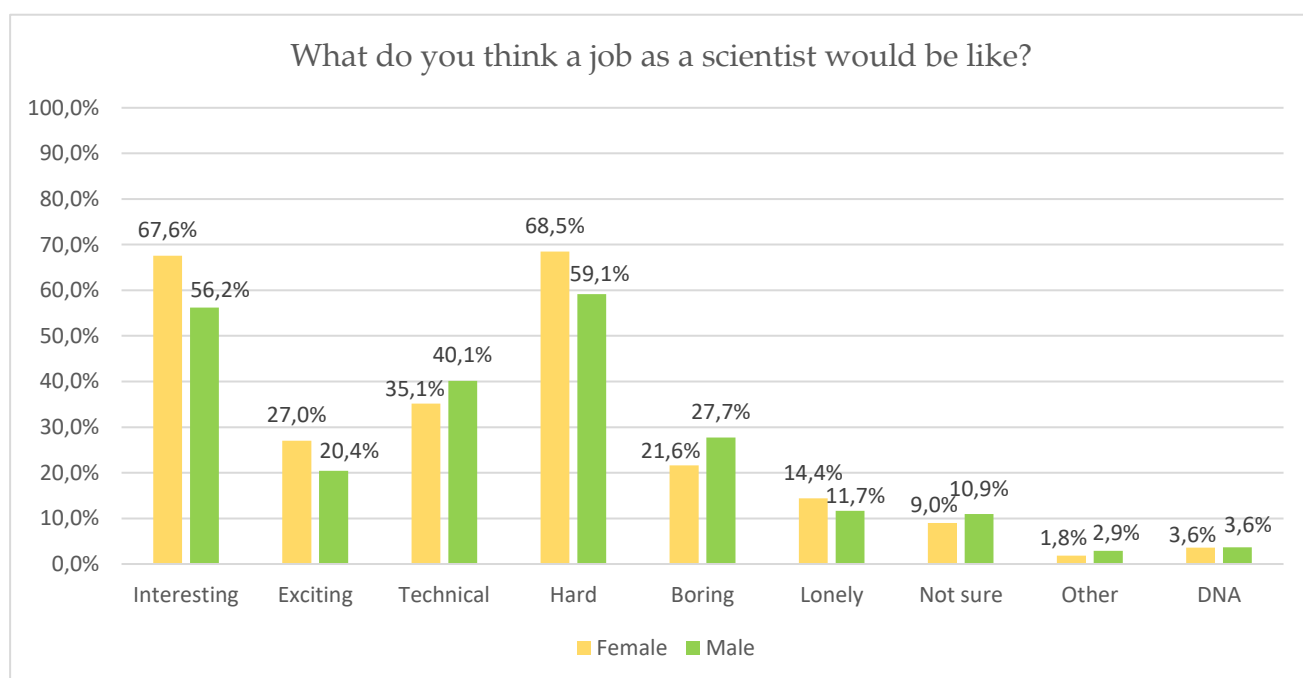
Graphic 161: Representation of the answers to question number five of the Life Sphere Broader Society in 1st year Irish students.

For graphic 161, the sample of students consisted of those who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 67 girls and 81 boys. The most common answer when asked with whom students visited the museum for both boys and girls is “Mother” (79.1% of girls and 66.7% of boys), followed by their father for boys (56.8%), while for girls was their sibling (67.2%). The school was also a commonly selected answer for 20.9% of girls and 18.5% of boys. Additionally, 4.5% of girls and 2.5% of boys selected the option “Other”, with girls adding cousins and both genders mentioning friends and noting that they don’t remember who they have been with.



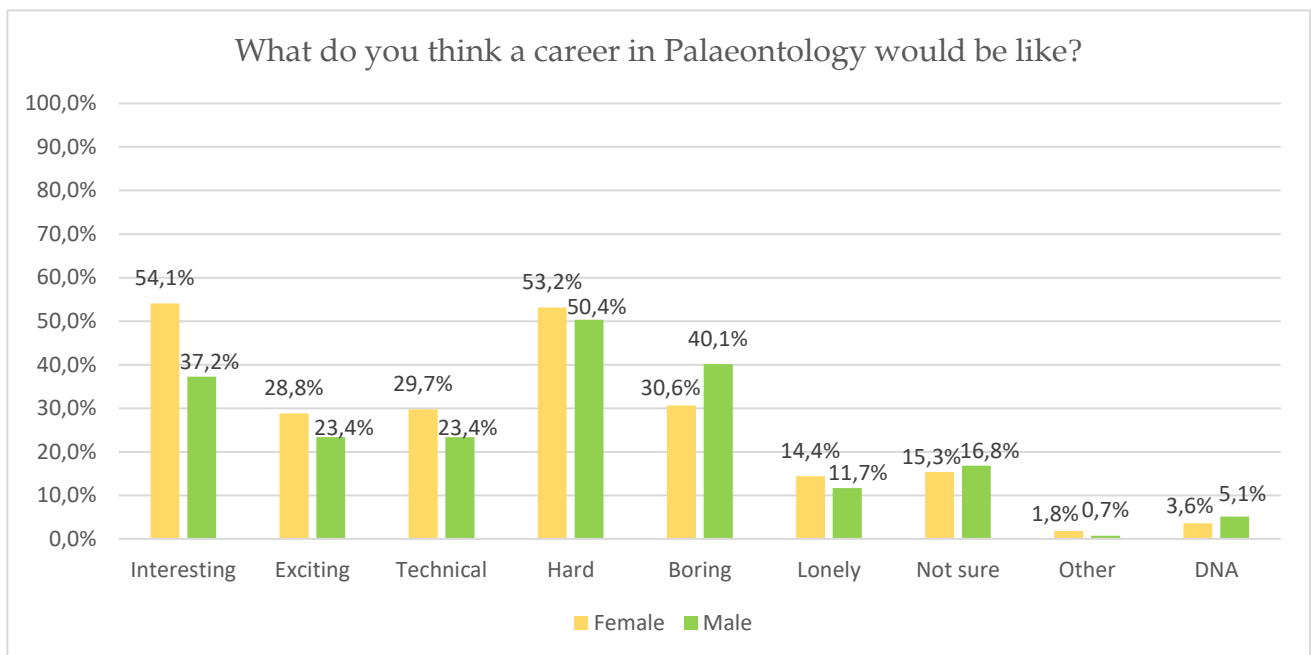
Graphic 162: Representation of the answers to question number six of the Life Sphere Broader Society in 1st year Irish students.

Graphic 162 displays the sample of students who replied affirmatively to question 4 of response for both genders is “No”, with 43.3% of girls and 56.8% of boys selecting this option. Followed by “Yes”, 28.4% of girls and 25.9% of boys expressed that seeing fossils in a museum made them want to learn more about them. Furthermore, 26.9% of girls and 16% of boys remained unsure.



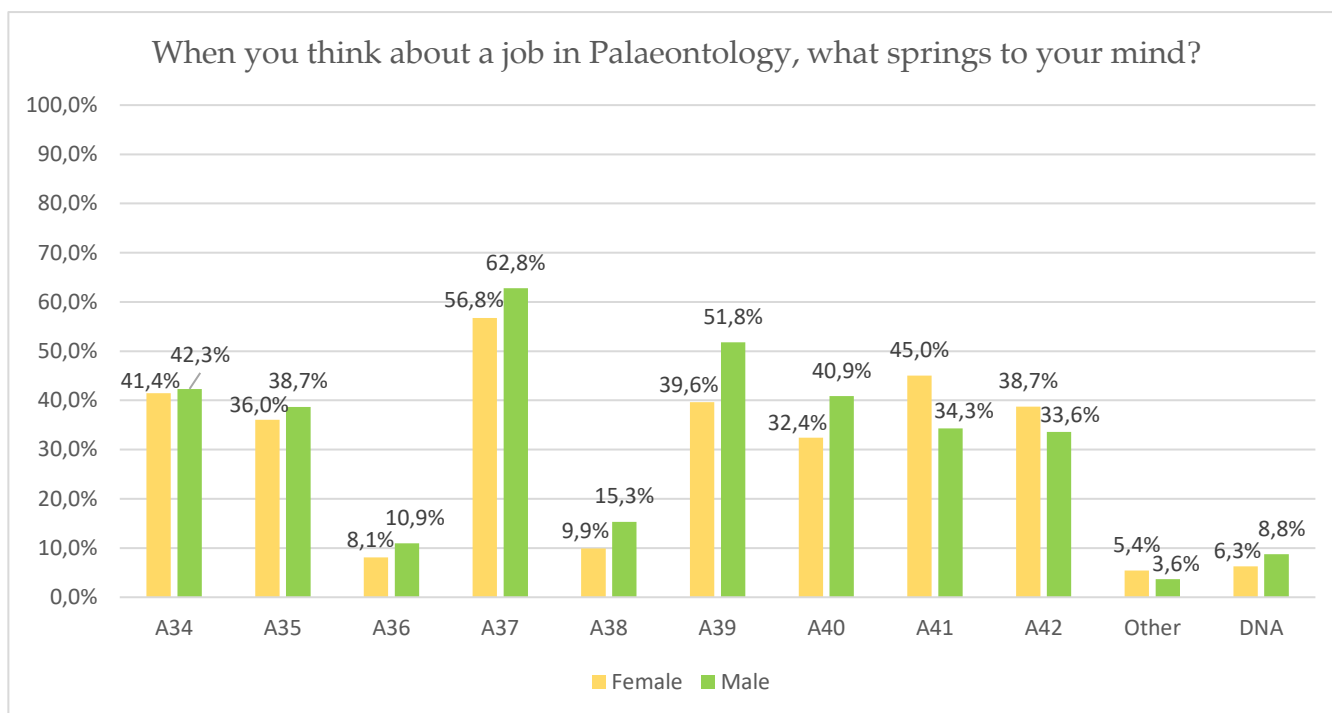
Graphic 163: Representation of the answers to question number seven of the Life Sphere Broader Society in 1st year Irish students.

Graphic 163 displays the overall count of students who participated in the surveys: 111 girls and 137 boys. When asked if students knew what a job as a scientist would be like, the most selected option was Hard, with 68.5% of girls and 59.1% of boys, followed by 67.6% of girls and 56.2% of boys expressing that it would be Interesting. The third most selected option was Technical, selected by 35.1% of girls and 40.1% of boys. Additionally, 21.6% of girls and 27.7% of boys think it's boring. A smaller percentage of 1.8% of girls and 2.9% of boys selected the option "Other", with girls adding that the job could also be exhausting with long hours and boys mentioning fun, scientific, dependent on the field and "Dumb".



Graphic 164: Representation of the answers to question number eight of the Life Sphere Broader Society in 1st year Irish students.

Graphic 164 illustrated the total number of students who participated in the surveys: 111 girls and 137 boys. Regarding the question about what students think a job as a palaeontologist would be like, 53.2% of girls and 50.4% of boys agree that it's Hard; however, most girls agree it's interesting (54.1%) compared with only 37.2% of boys. Additionally, 40.1% of boys think it's Boring, and 30.6% of girls agree. Followed by Technical by 29.7% of girls and 23.4% of boys, the same percentage as for Exciting, which 28.8% of girls also selected, and 14.4% of girls and 11.7% of boys think it is Lonely. In this question, both genders selected the option "Other", with 1.8% of girls adding amazing and "not good" and 0.7% of boys adding fun.



Graphic 165: Representation of the answers to question number nine of the Life Sphere Broader Society in 1st year Irish students.

Description

A34 Working in a lab a lot

A35 Going on field trips a lot

A36 Meetings all-day

A37 Excavating and preparing fossils

A38 Work alone

A39 Work with a team

A40 Drawing dinosaurs and other extinct animals

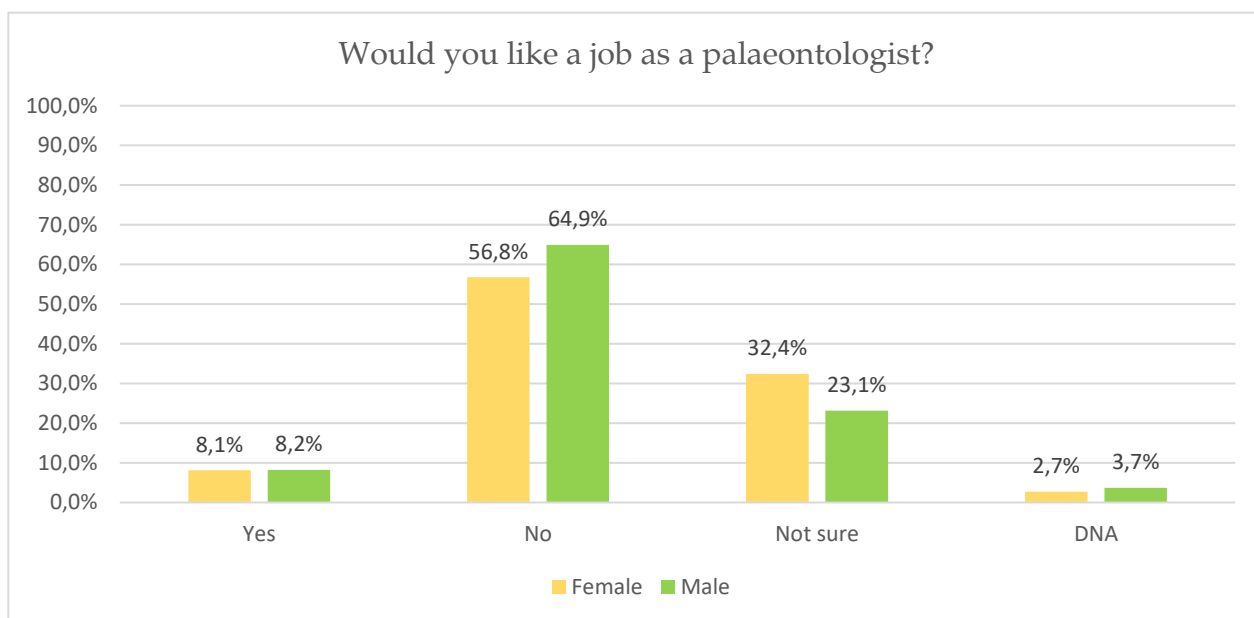
A41 Giving lectures and talks

A42 Working in a museum

DNA Did Not Answer

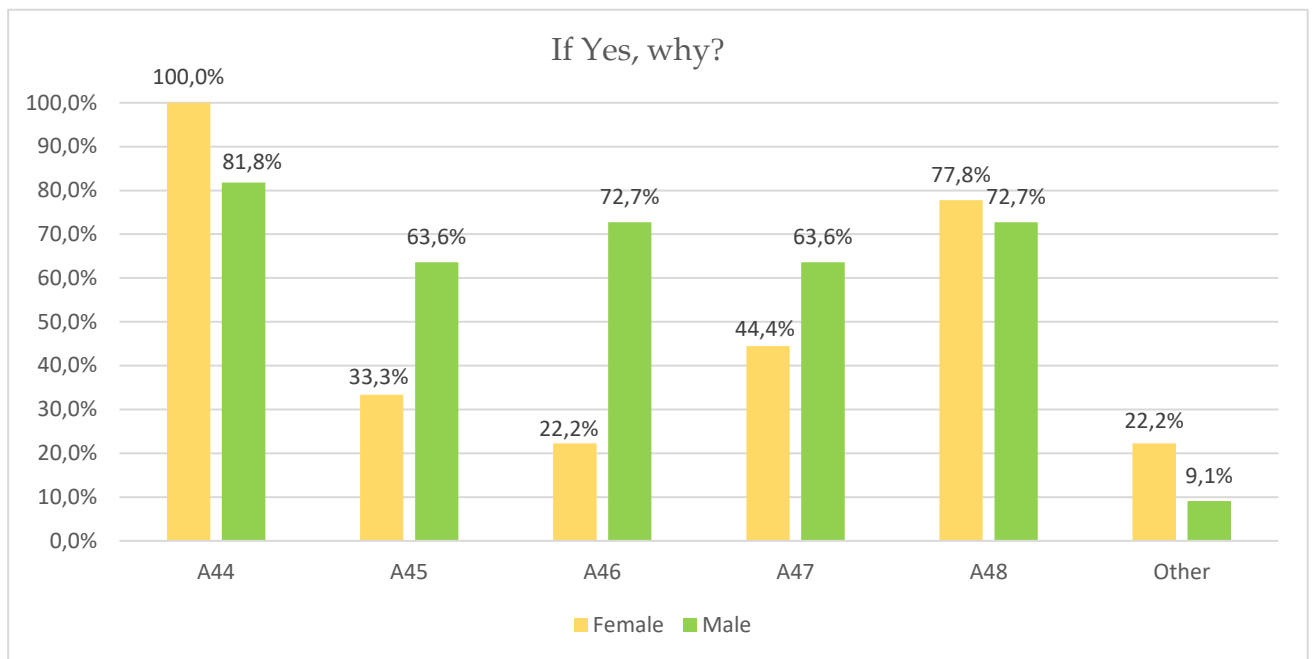
Graphic 165 displays the overall count of students who participated in the surveys: 111 girls and 137 boys. The most common response when asking students what they think palaeontologists do is excavating and preparing fossils, with 56.8% of girls and 62.8% of boys selecting this answer, followed by working in a team for boys (51.8%) and giving lectures and talk for girls (45%). The third most common answer is working in a laboratory (41.4% of girls and 42.3% of boys). Some other common answers are going on field trips often, with 36% of girls and 38.7% of boys selecting this and drawing dinosaurs and other extinct animals (32.4% of girls and 40.9% of boys). A less common response was having meetings all day for girls at 8.1% and 10.9% for boys. Both genders selected the option “Other”, with female students (5.4%) and male students (3.6%) also adding that they believe palaeontologists learn about land that

might contain fossils, a job similar to the ones depicted in “Jurassic Park” and by Ross from the show “Friends”, some students also say they are unsure about the specific tasks a palaeontologist performs, with boys also mentioning the discovery of dinosaur fossils.



Graphic 166: Representation of the answers to question number ten of the Life Sphere Broader Society in 1st year Irish students.

Graphic 166 displays the total sample of students who replied to the surveys, totalling 111 girls and 137 boys. However, due to 3 invalid answers, only 134 male students were accounted for these results. The predominant response when asked if they would like a job as a palaeontologist for both genders is “No,” with 56.8% of girls and 64.9% of boys selecting this option, followed by “Not sure”, with 32.4% of girls and 23.1% of boys. Only 8.1% of girls and 8.2% of boys selected having an interest in a job in palaeontology.



Graphic 167: Representation of the answers to question number eleven of the Life Sphere Broader Society in 1st year Irish students.

Description

A44 I want to learn more about extinct animals and plants

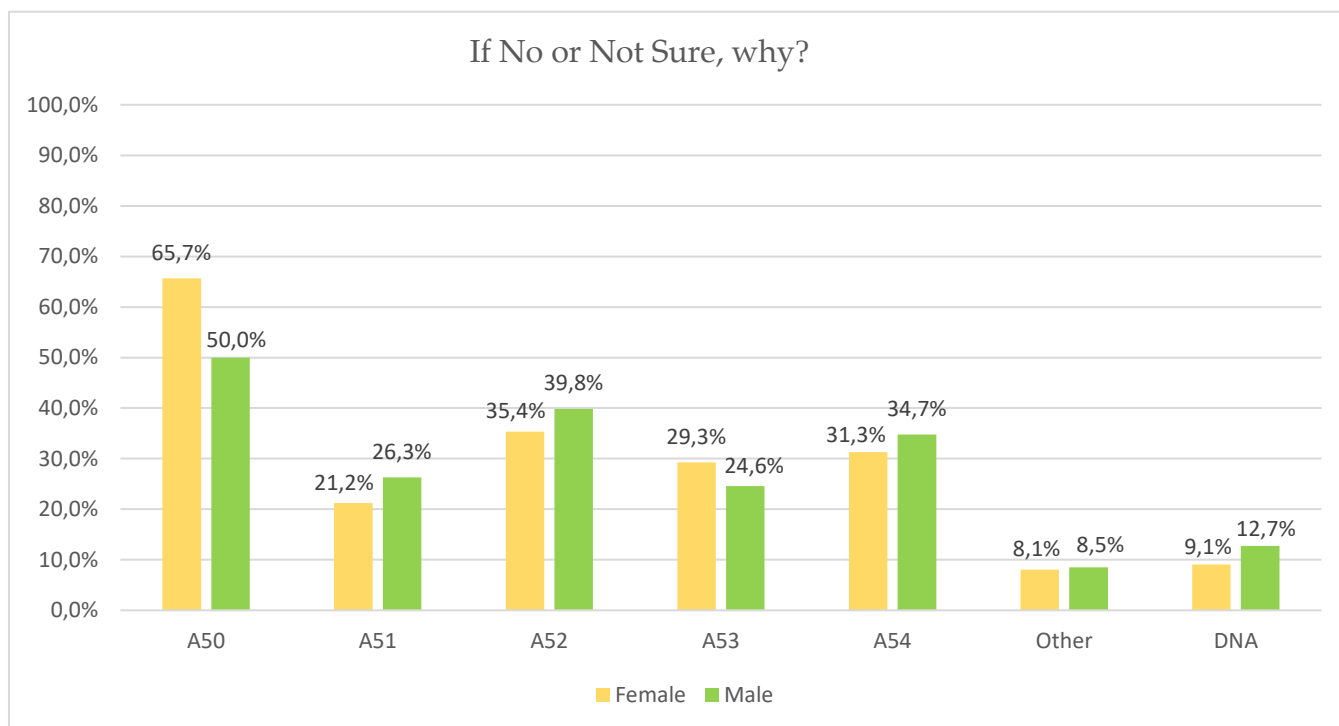
A45 I want to learn more about extinctions

A46 I like dinosaurs

A47 I like fossils

A48 I think learning about the past is fascinating

Graphic 167 showcases the subset of students who replied positively to question 10 of the Broader Society Life Sphere, amounting 9 girls and 11 boys. Among girls (100%) and boys (81.8%), the primary reason for aspiring to become palaeontologists are the desire to learn more about extinct animals and plants, followed by finding learning about the past fascinating (77.8% for girls and 72.7% for boys), the same percentage for boys are liking dinosaurs while for girls, the third most common answer is liking fossils (44.4%). For 22.2% of girls, “Other” reasons for wanting to be a palaeontologist include understanding books better and learning about how the world was formed, and 9.1% of boys like palaeontology because they would learn how to excavate.



Graphic 168: Representation of the answers to question number twelve of the Life Sphere Broader Society in 1st year Irish students.

Description

A50 I have never thought about it

A51 I am not interested in planet Earth's past

A52 It's boring

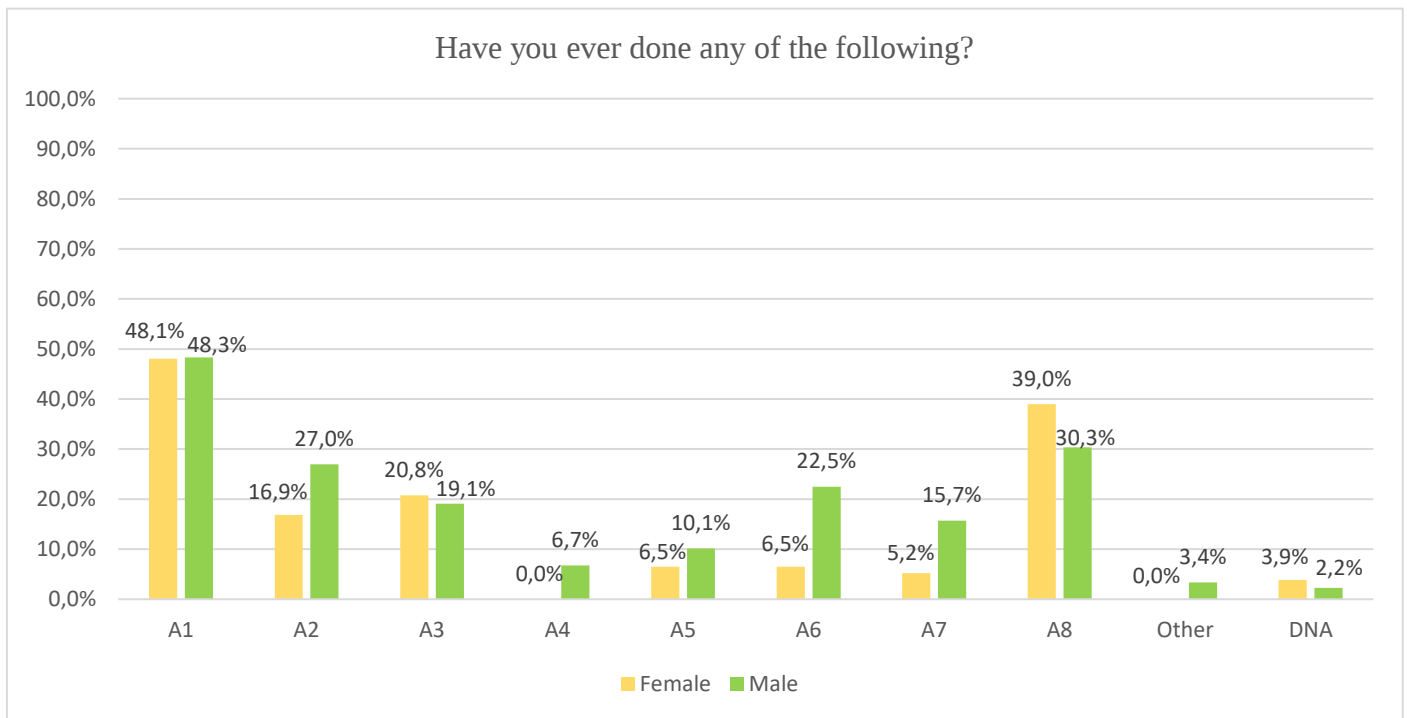
A53 It's too hard

A54 I don't like the subjects

DNA: Did Not Answer

For graphic 168, it was considered the total number of students who replied "No" or "Not sure" to question 10; this includes 99 girls and 118 boys. The primary reason cited for both genders (65.7% of girls and 50% of boys) for not aspiring to become palaeontologists is that they have never thought about it. The second most common reason is finding it boring (39.8% of boys and 35.4% of girls), with the third option being disliking the subjects related to the area (31.3% of girls and 34.7% of boys). Being too hard accounts for 29.3% of girls and 24.6% of boys' answers. Additionally, 21.2% of female and 26.3% of male students express a lack of interest in planet Earth's past, with 8.5% of boys and 8.1% of girls selecting the option "Other", indicating that they do not intend to pursue a career as a palaeontologist in the future because it is not an area of interest, and they already have other plans in mind, and one boy also mentioned that "being in the desert a lot" would deter him from becoming a palaeontologist and other adding that is a "weird" profession.

2nd YEAR



Graphic 169: Representation of the answers to question number one of the Life Sphere Broader Society in 2nd year Irish students.

Description:

A1 Watch a TV programme or documentary about palaeontology

A2 Watch a YouTube video about palaeontology

A3 Watch a film about palaeontology

A4 Listened to a podcast about palaeontology

A5 Listened to someone talk about palaeontology on the radio

A6 Used apps or games on your phone, tablet and/or computer about palaeontology

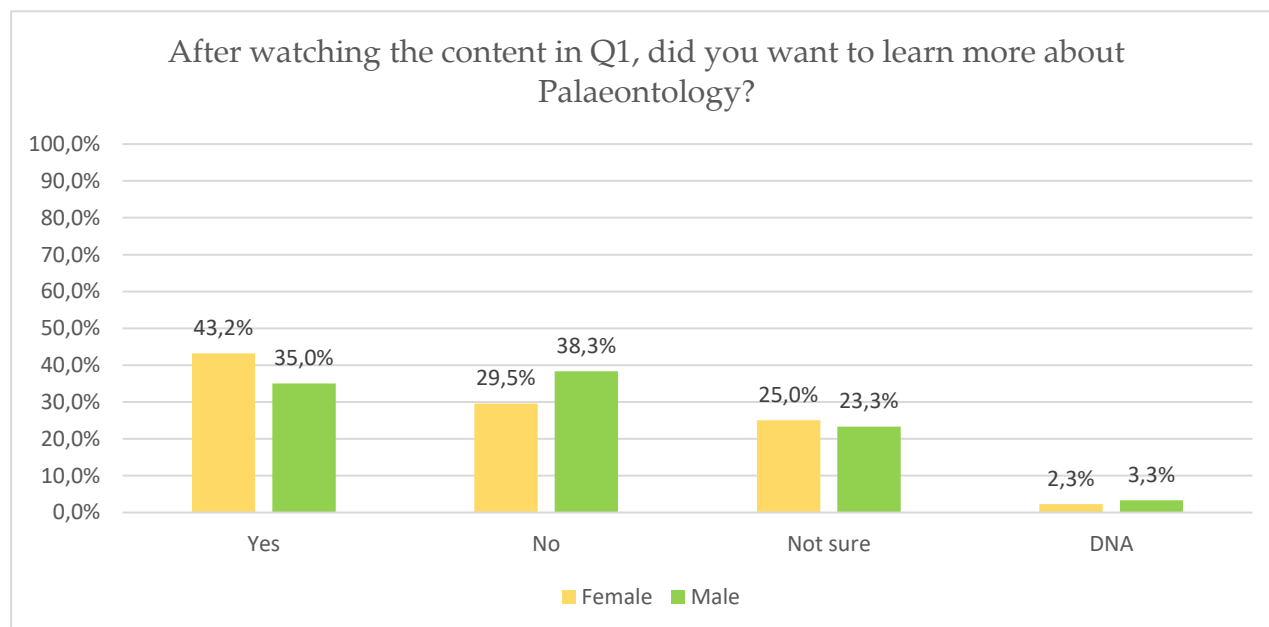
A7 Watch someone give a talk about palaeontology

A8 None of the above

DNA: Did Not Answer

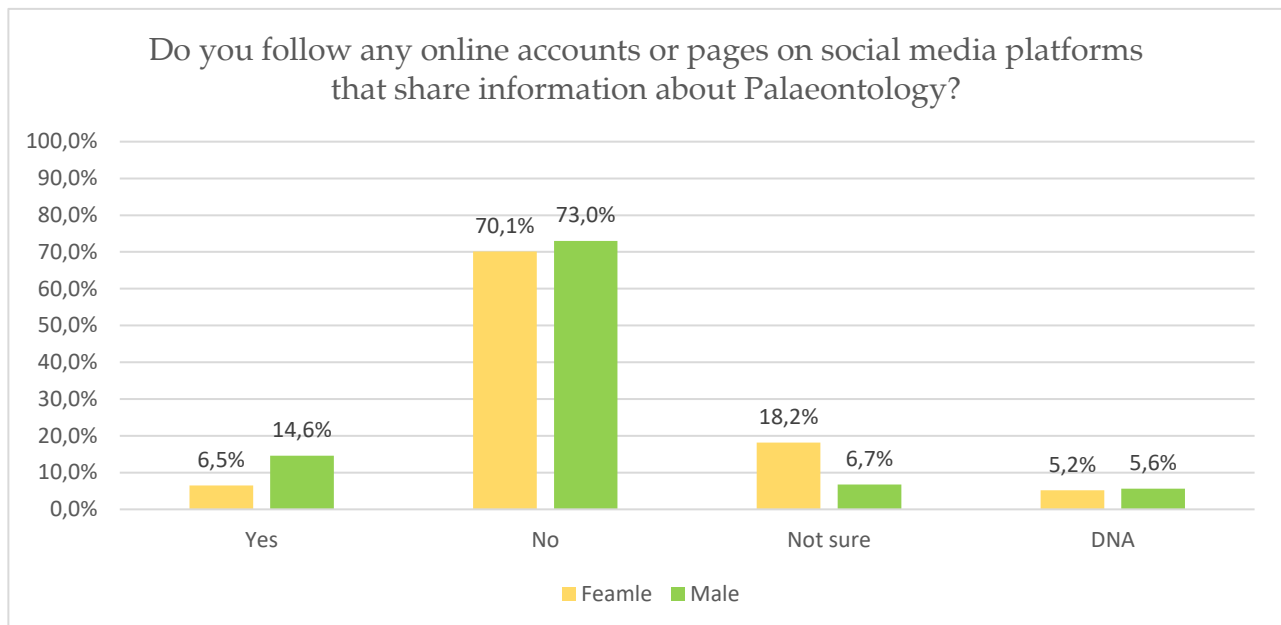
Graphic 169 represents the sample of 2nd year female and male students, comprising 77 girls and 89 boys. The majority of the sample, with 39% of girls and 30.3% of boys, reported never participating in any activity related to Palaeontology. Among those who did, 48.1% of girls and 48.3% of boys watched a television programme or documentary. For girls (20.8%), watching a film is the second most common answer, followed by watching a YouTube video (16.9%). The second most predominant activity for boys (27%) was watching a YouTube video; after that, using an app or games on their electronic devices (22.5%). Less commonly chosen activities include listening to a podcast, with no girls selecting this option and only 6.7% of boys

doing so and listening to someone talk about Palaeontology on the radio (6.5% of girls and 10.1% of boys). Notably, 3.4% of boys selected the option “Other”, adding toys and talking about fossils and dinosaurs with a younger brother.



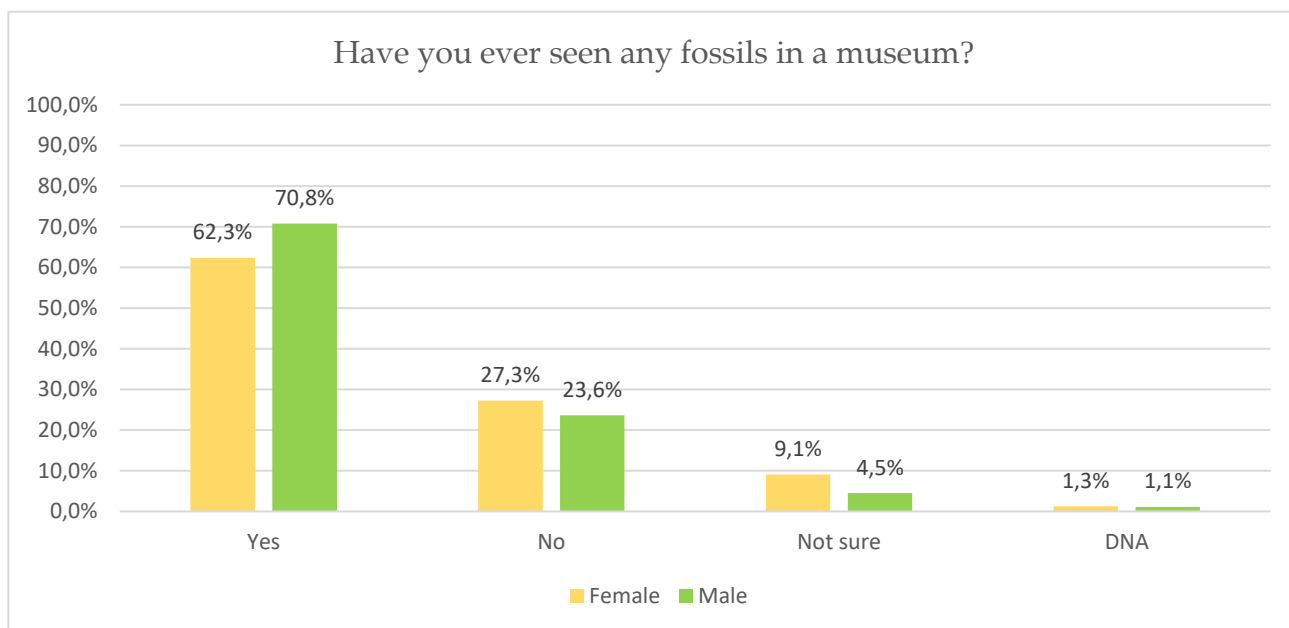
Graphic 170: Representation of the answers to question number two of the Life Sphere Broader Society in 2nd year Irish students.

For this graphic, the sample comprises students who responded to question 1, consisting of those who have participated in activities related to palaeontology, totalling 44 girls and 60 boys. Notably, 43.2% of girls and 35% of boys have learned something new regarding palaeontology when participating in palaeontologic activities. In comparison, 29.5% of girls and 38.3% of boys mentioned that they did not, and 25% of girls and 23.3% of boys expressed uncertainty.



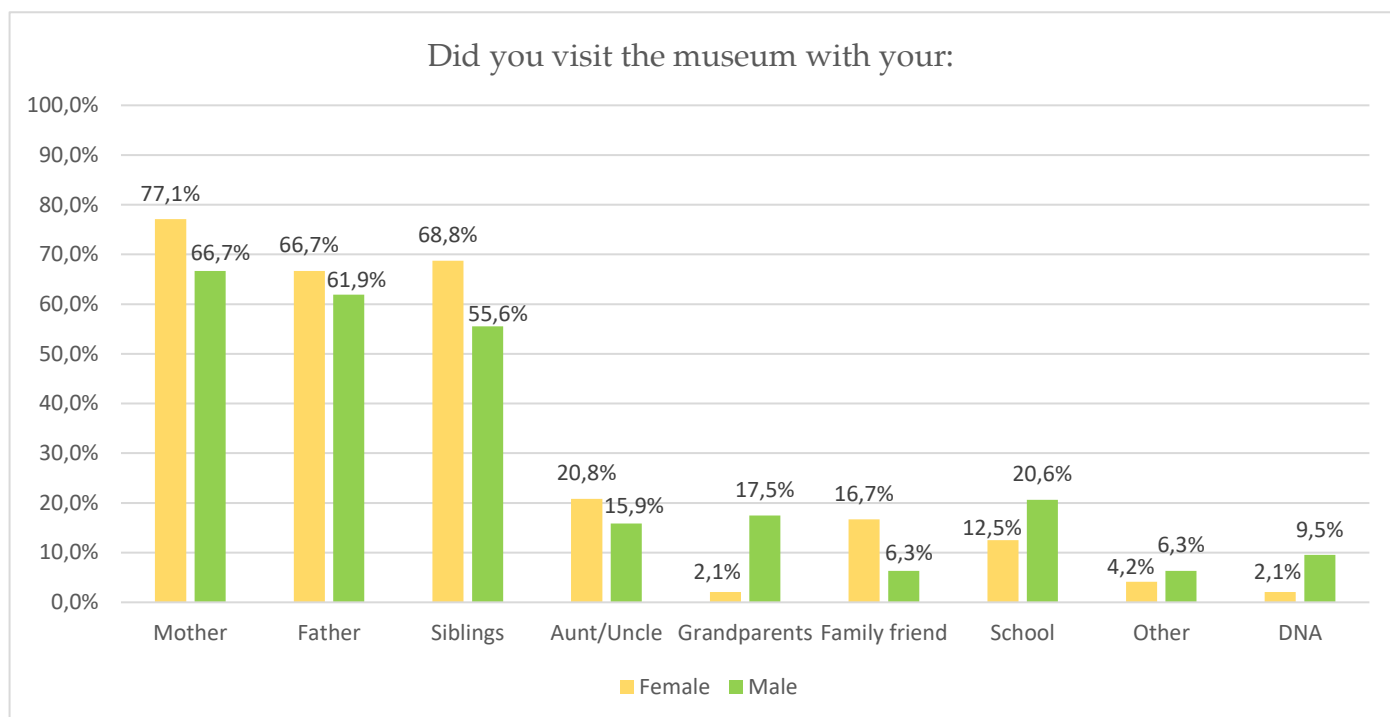
Graphic 171: Representation of the answers to question number three of the Life Sphere Broader Society in 2nd year Irish students.

This graphic represents the sample of 2nd year female and male students, comprising 77 girls and 89 boys. Notably, the answer with the biggest percentage for both genders is “No” (70.1% of girls and 73% of boys). Only 6.5% of girls and 14.6% of boys indicate that they follow online accounts or social media pages about Palaeontology, while 18.2% of girls and 6.7% of boys express uncertainty.



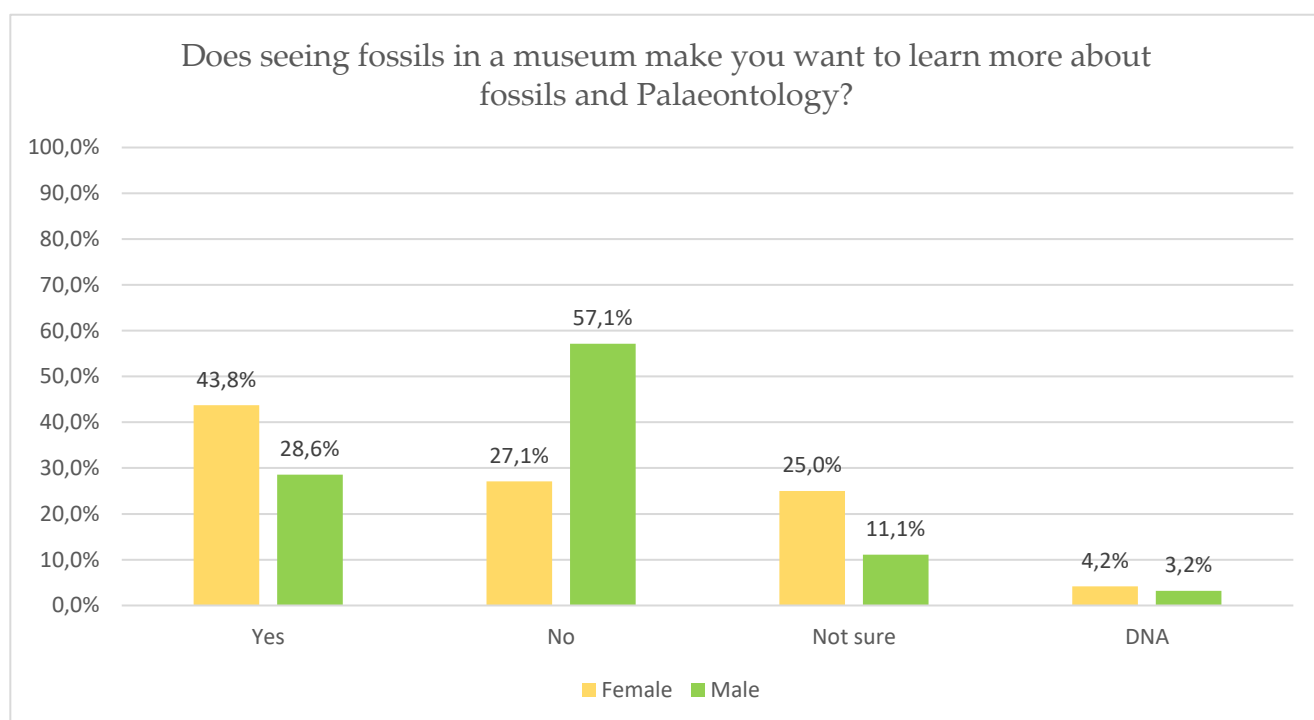
Graphic 172: Representation of the answers to question number four of the Life Sphere Broader Society in 2nd year Irish students.

Graphic 172 displays the overall count of students who participated in the surveys: 77 girls and 89 boys. The predominant response among female and male students when asked if they have ever seen fossils in a museum is “Yes”, with 62.3% of girls and 70.8% of boys selecting this option. A smaller percentage, 27.3% of girls and 23.6% of boys, stated that they had never seen fossils exposed in a museum, while 9.1% of girls and 4.5% of boys expressed uncertainty.



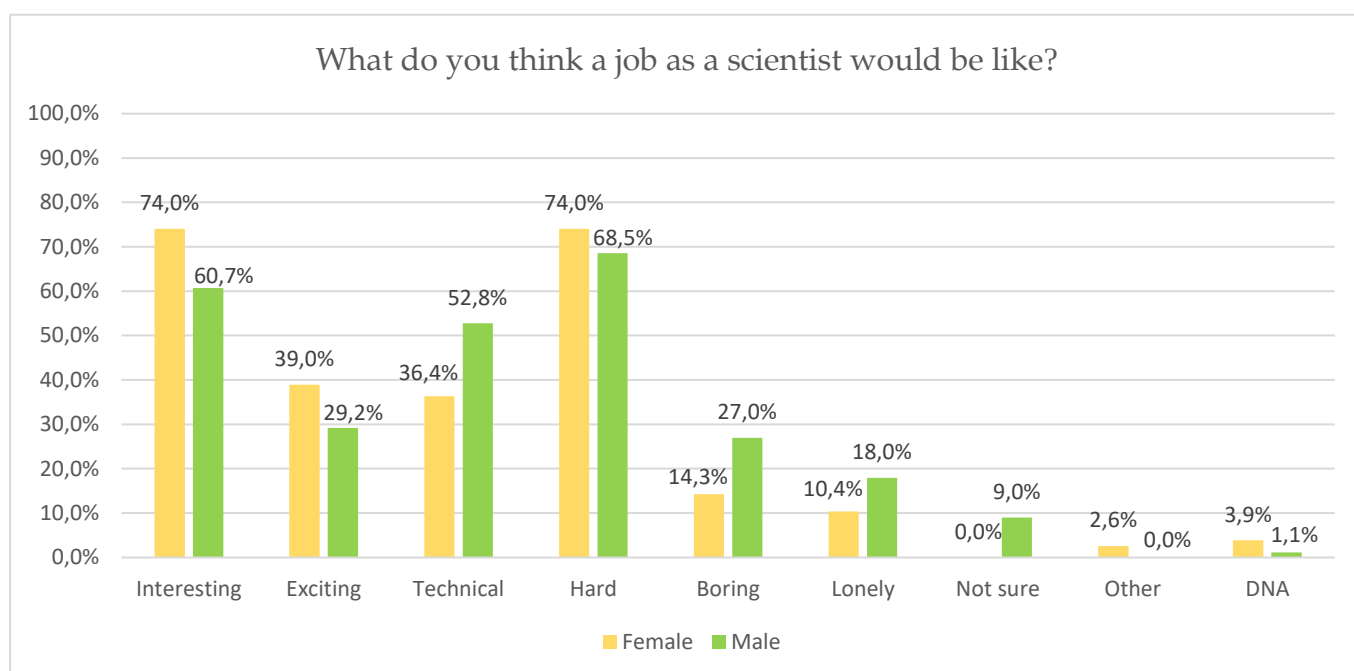
Graphic 173: Representation of the answers to question number five of the Life Sphere Broader Society in 2nd year Irish students.

For graphic 173, the sample of students consisted of those who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 48 girls and 63 boys. The most common answer when asked with whom students visited the museum for both boys and girls is “Mother” (77.1% of girls and 66.7% of boys), followed by their father for boys (61.9%), while for girls was their sibling (68.8%). The school was also a commonly selected answer, with 20.6% of boys and 12.5% of girls selecting this option. Aunt/Uncle is also a member of the family with whom the students seem to be visiting museums (20.8% of girls and 15.9% of boys). Additionally, 4.2% of girls and 6.3% of boys selected the option “Other”, with both genders adding cousins and that they don’t remember who they have been with. Boys also mentioned friends and online school tours.



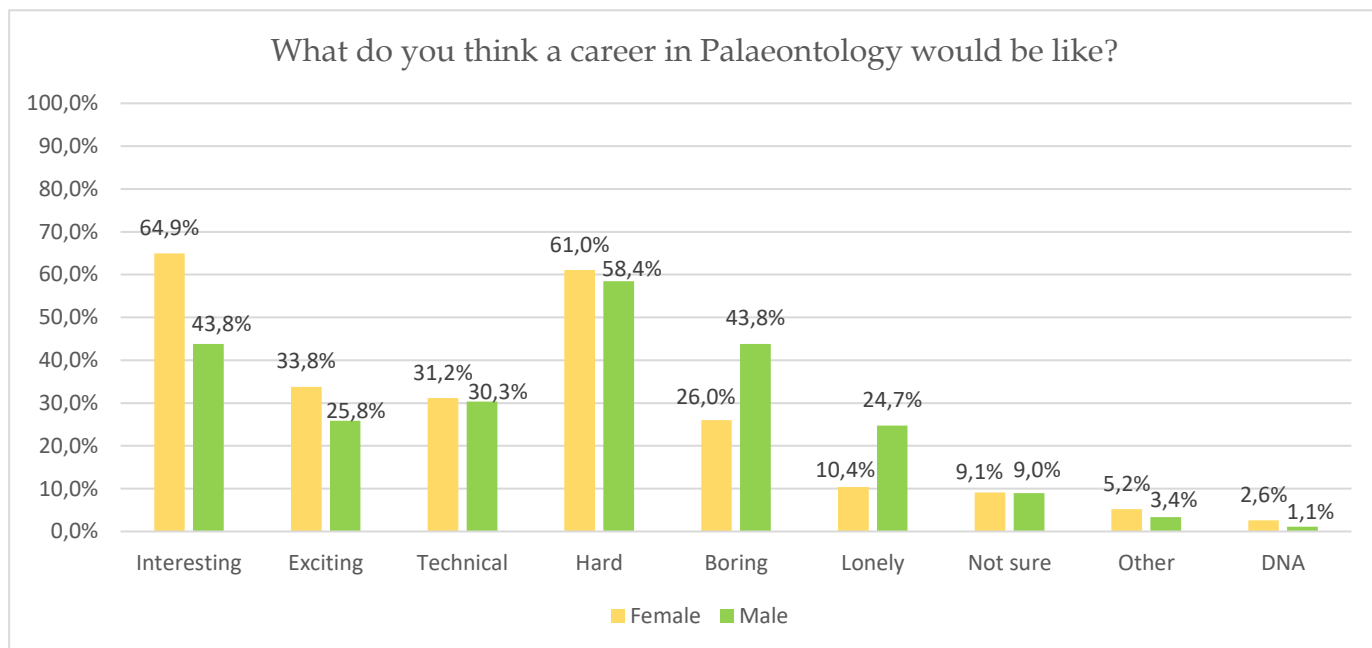
Graphic 174: Representation of the answers to question number six of the Life Sphere Broader Society in 2nd year Irish students.

Graphic 174 displays the sample of students who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 48 girls and 63 boys. The predominant response for boys is “No”, with 57.1% selecting this option compared to girls (27.1%). The answer “Yes” was selected by 43.8% of girls and 28.6% of boys. Furthermore, 25% of girls and 11.1% of boys remained unsure.



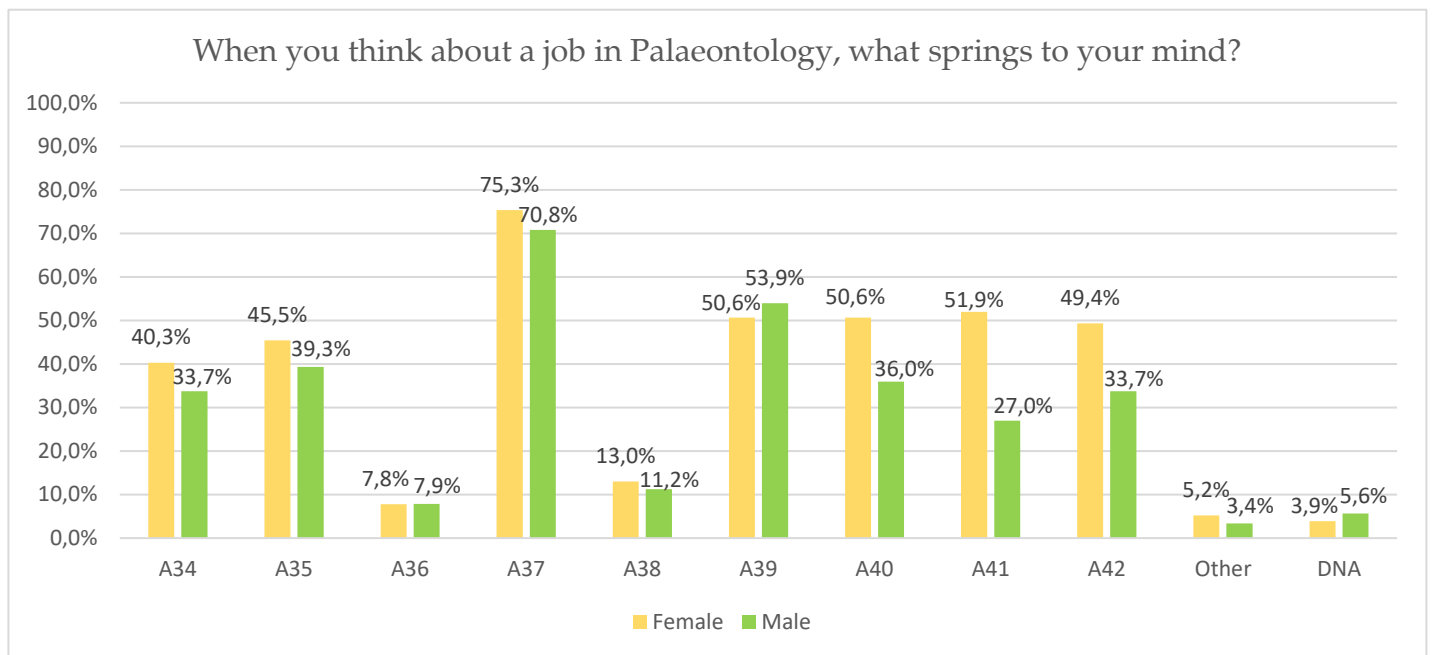
Graphic 175: Representation of the answers to question number seven of the Life Sphere Broader Society in 2nd year Irish students.

Graphic 175 displays the overall count of students who participated in the surveys: 77 girls and 89 boys. When asked if students knew what a job as a scientist would be like, the most selected option for girls was Hard and Interesting (74%), a similar choice for boys with Hard (68.5%) and Interesting (60.7%). The third most selected option for girls was Exciting (39%), followed by Technical (36.4%). Of the boys, 52.8% agreed that a job as a scientist would be technical before being Exciting (29.2%). Additionally, 14.3% of girls and 27% of boys think it would be boring. A smaller percentage of 2.6% of girls selected the option "Other," adding that it would be a very difficult and confusing job.



Graphic 176: Representation of the answers to question number eight of the Life Sphere Broader Society in 2nd year Irish students.

Graphic 176 illustrated the total number of students who participated in the surveys: 77 girls and 89 boys. Regarding the question about what students think a job as a palaeontologist would be like, 64.9% of girls think it would be interesting, with 43.8% of boys agreeing. Hard was selected by 61% of girls and 58.4% of boys. Additionally, 43.8% of boys think it would be boring, and 26% of girls agree. A technical career was chosen by 31.2% of girls and 30.3% of boys. As for Exciting, 33.8% of girls have also selected it, along with 25.8% of boys. Moreover, 10.4% of girls and 24.7% of boys think it is Lonely. In this question, both genders selected the option "Other", with 5.2% of girls adding "time-consuming" and "terrible" and 3.4% of boys adding "long" and "sad".



Graphic 177: Representation of the answers to question number nine of the Life Sphere Broader Society in 2nd year Irish students.

Description

A34 Working in a lab a lot

A35 Going on field trips a lot

A36 Meetings all-day

A37 Excavating and preparing fossils

A38 Work alone

A39 Work with a team

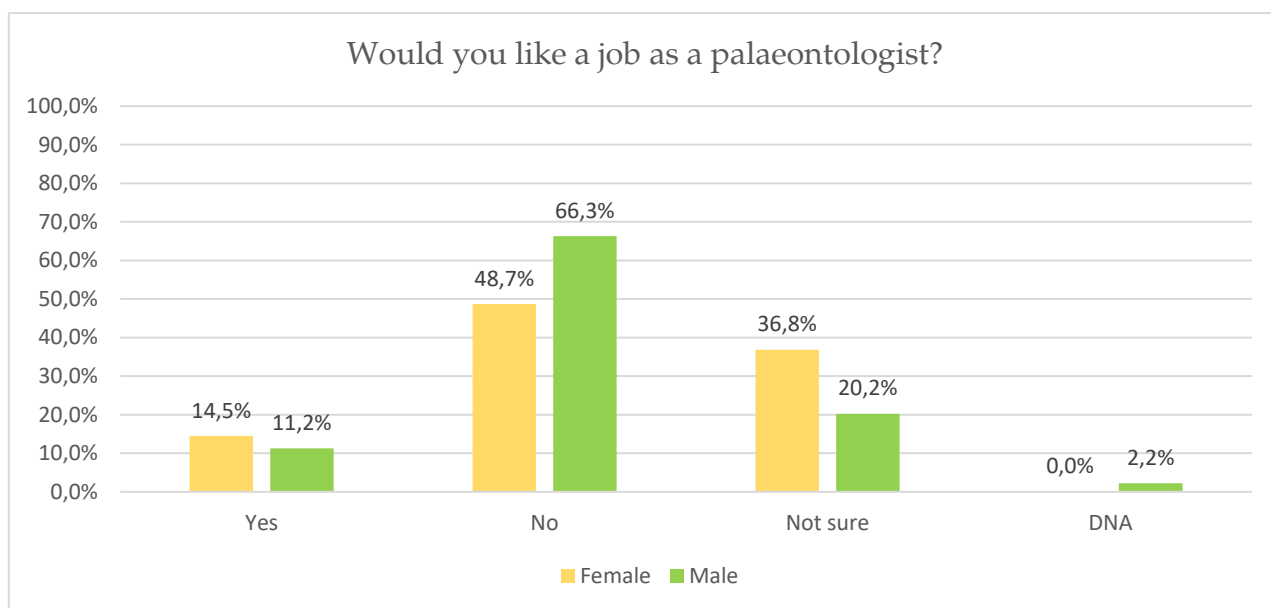
A40 Drawing dinosaurs and other extinct animals

A41 Giving lectures and talks

A42 Working in a museum

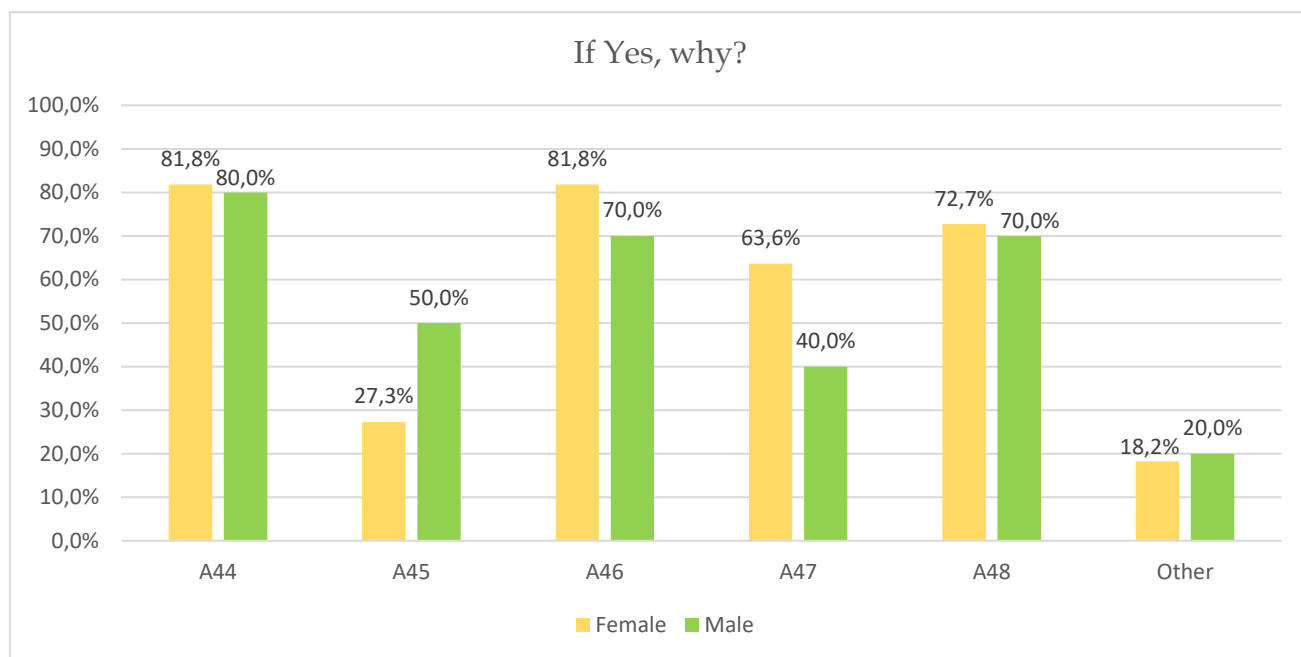
DNA Did not answer

Graphic 177 displays the overall count of students who participated in the surveys: 77 girls and 89 boys. The most common response when asking students what they think palaeontologists do is excavating and preparing fossils, with 75.3% of girls and 70.8% of boys selecting this answer, followed by working in a team for boys (53.9%) and giving lectures and talk for girls (51.9%). The third most common answer for girls is working in a team and drawing dinosaurs and other extinct animals (50.6%), while for boys, it is going on field trips often (39.3%). Less common responses are having meetings all day for girls at 7.8% and 7.9% for boys and working alone (13% of girls and 11.2% of boys). Both genders selected the option “Other”, with female students (5.2%) citing going to fossil sites like the fictional character *Indiana Jones* and studying the fossils they find. Male students (3.4%) also mentioned putting fossils in museums; one student added, “being lonely and friendless”.



Graphic 178: Representation of the answers to question number ten of the Life Sphere Broader Society in 2nd year Irish students.

Graphic 178 displays the total sample of students who replied to the surveys, totalling 77 girls and 89 boys. However, due to 1 invalid answer, only 76 female students accounted for these results. The predominant response when asked if they would like a job as a palaeontologist for both genders is “No,” with 48.7% of girls and 66.3% of boys selecting this option, followed by “Not sure”, with 36.8% of girls and 20.2% of boys. Nevertheless, 14.5% of girls and 11.2% of boys selected having an interest in a job in Palaeontology.



Graphic 179: Representation of the answers to question number eleven of the Life Sphere Broader Society in 2nd year Irish students.

Description

A44 I want to learn more about extinct animals and plants

A47 I like fossils

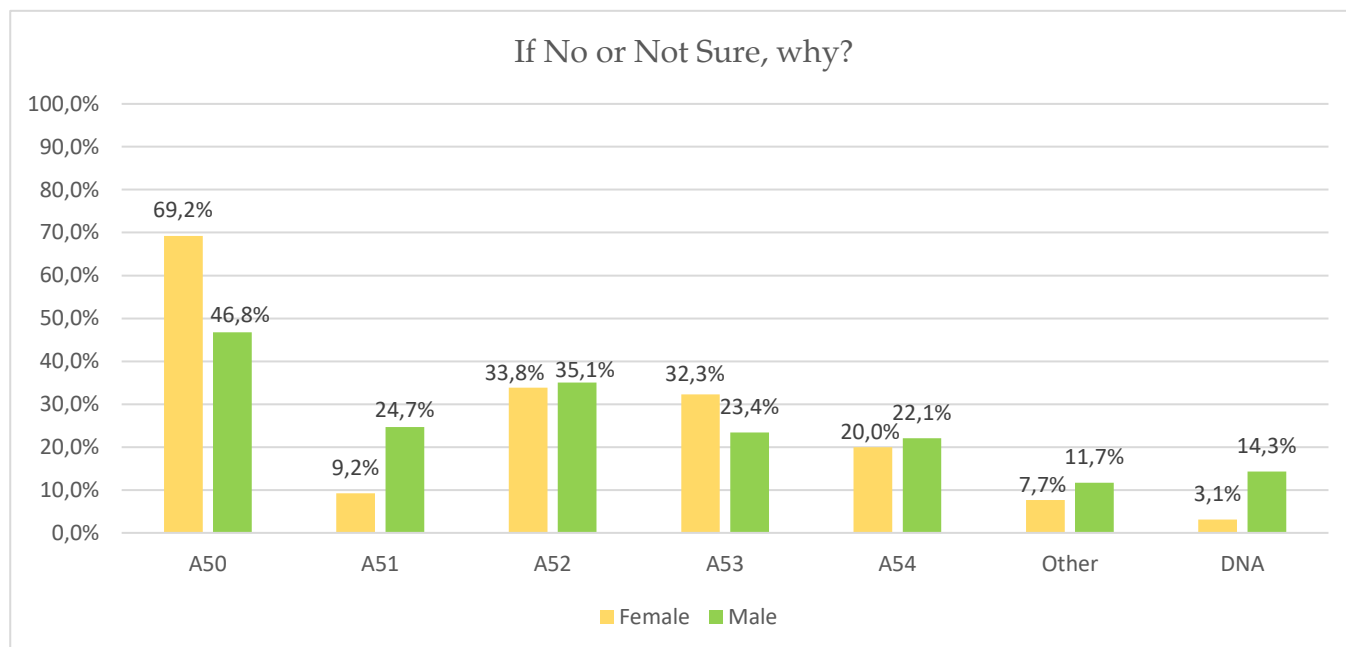
A45 I want to learn more about extinctions

A48 I think learning about the past is fascinating

A46 I like dinosaurs

Graphic 179 showcases the subset of students who replied positively to question 10 of the Broader Society Life Sphere, amounting 11 girls and 10 boys. Among girls, 81.8% selected wanting to become a palaeontologist because they would like to learn more about extinct animals and plants and because they like dinosaurs. For boys, the options most selected were similar, with 80% wanting to learn more about extinct animals and plants, and the second most common answer was liking dinosaurs and finding learning about the past fascinating (70%). The third most common answer is liking fossils for girls (63.6%) and for boys, wanting to learn more about extinctions (50%). For 18.2% of girls, “Other” reasons for wanting to be a palaeontologist include enjoying science and sketching, and for 20% of boys, is because the past is

fascinating and interesting and for the reason that they learn about what animals and apex predators came before humans.



Graphic 180: Representation of the answers to question number twelve of the Life Sphere Broader Society in 2nd year Irish students.

Description

A50 I have never thought about it

A51 I am not interested in planet Earth's past

A52 It's boring

A53 It's too hard

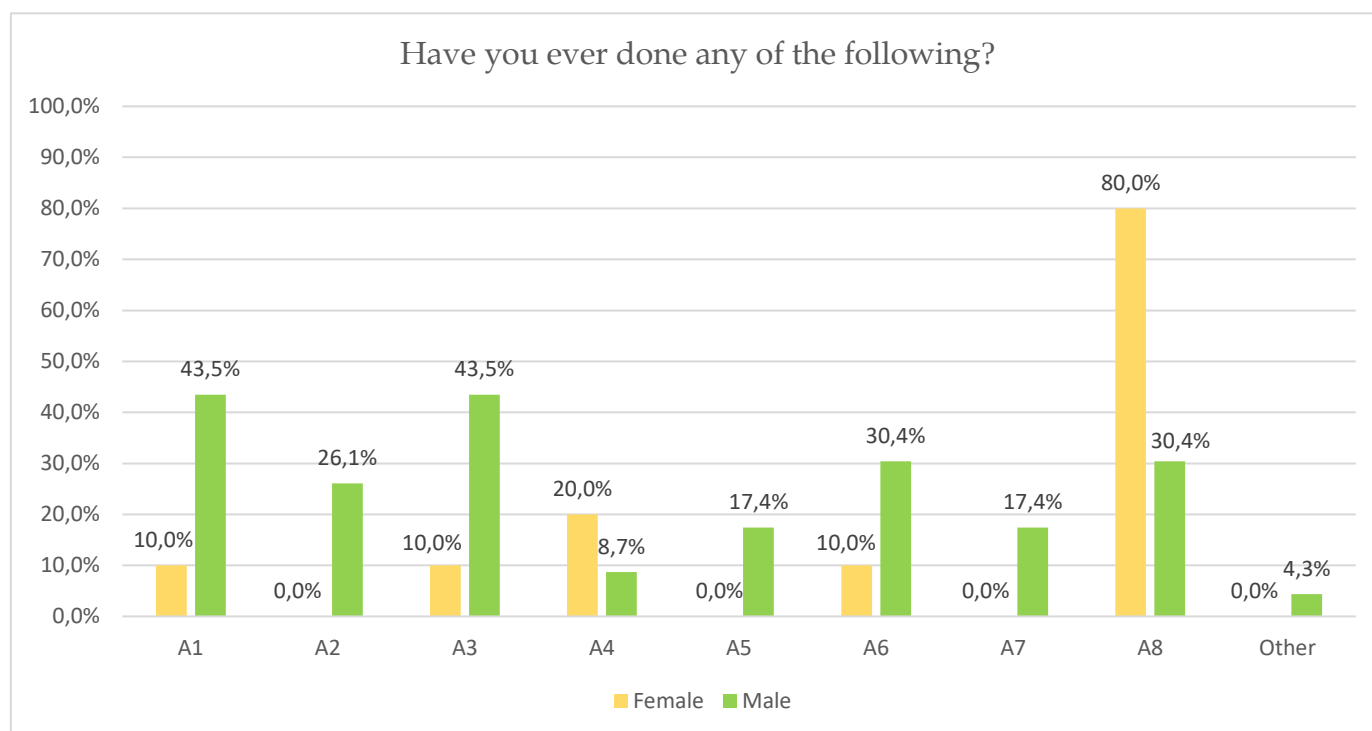
A54 I don't like the subjects

DNA Did Not Answer

For graphic 180, it was considered the total number of students who replied "No" or "Not sure" to question 10; this includes 65 girls and 77 boys. The primary reason cited for both genders (69.2% of girls and 46.8% of boys) for not aspiring to become palaeontologists is that they have never thought about it. The second most common reason is finding it boring (33.8% of girls and 35.1% of boys), with the third option for girls being too difficult (32.3%) while for boys is not being interested in planet Earth's past (24.7%). Disliking the subjects related to the area was selected by 20% of girls and 22.1% of boys. Additionally, 11.7% of boys and 7.7% of girls selected the option "Other", indicating that they do not intend to pursue a career as a palaeontologist in the future because it is not an area of interest, with girls adding they are not sure what Palaeontology is and what are the responsibilities and having to work in a dusty environment and boys mentioning that they believe most fossils have been discovered hence

there is not much to do, that it sounds like a lonely and boring profession, that they are better science areas and some believe it's a useless occupation.

3rd YEAR



Graphic 181: Representation of the answers to question number one of the Life Sphere Broader Society in 3rd year Irish students.

Description

A1 Watch a TV programme or documentary about palaeontology

A2 Watch a YouTube video about palaeontology

A3 Watch a film about palaeontology

A4 Listened to a podcast about palaeontology

A5 Listened to someone talk about palaeontology on the radio

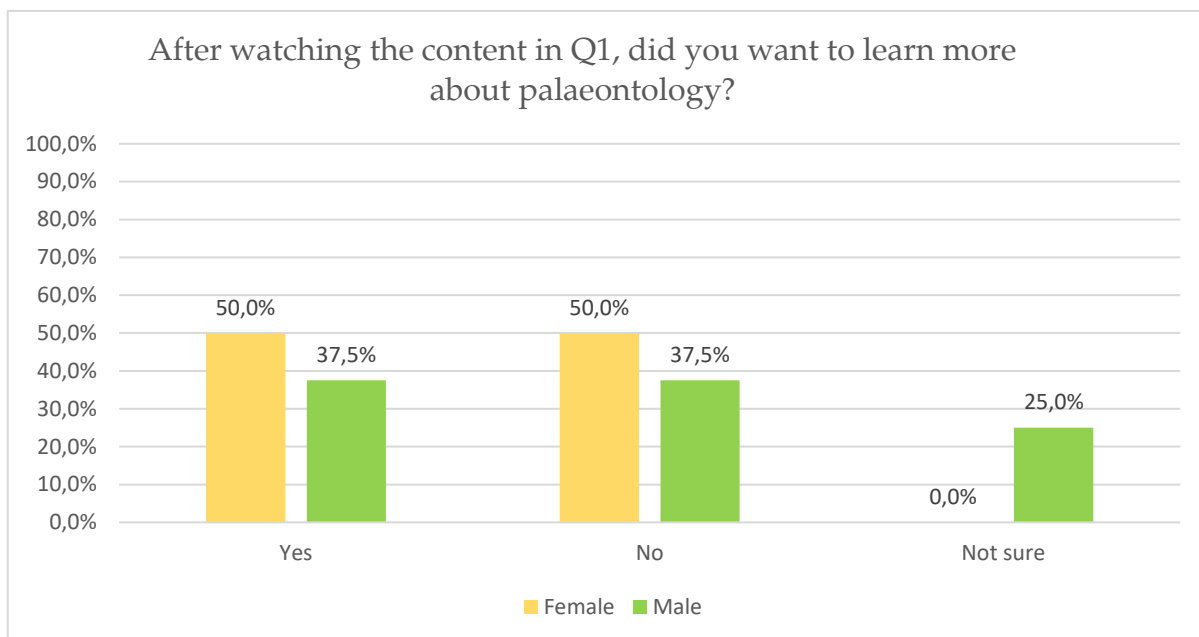
A6 Used apps or games on your phone, tablet and/or computer about palaeontology

A7 Watch someone give a talk about palaeontology

A8 None of the above

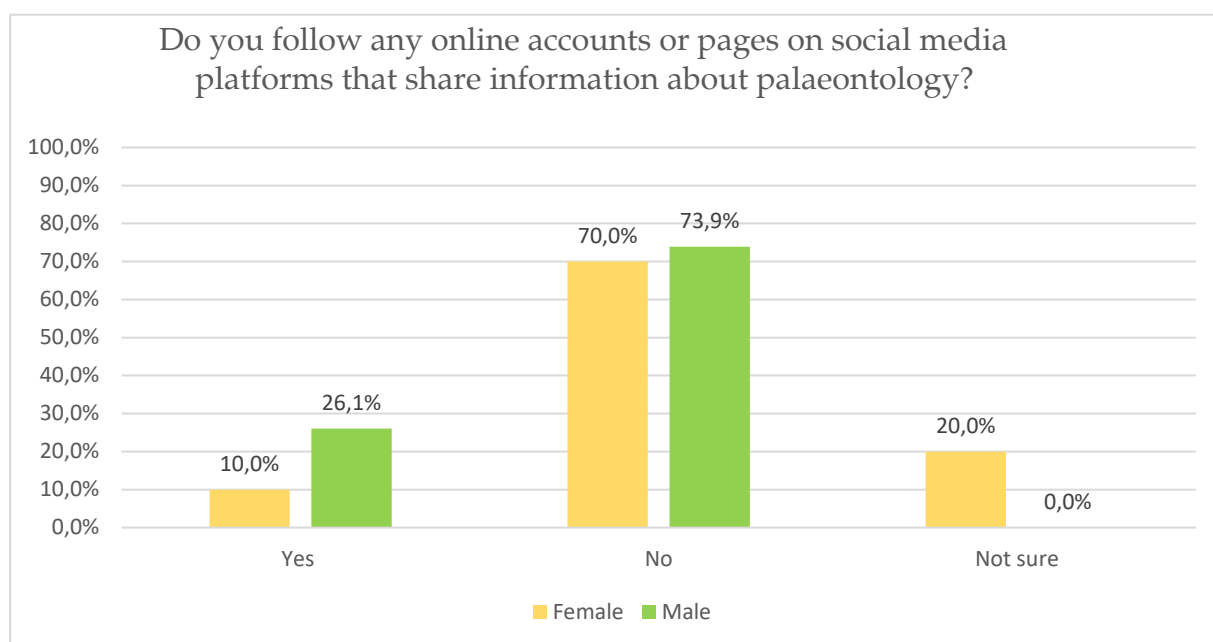
Graphic 181 represents the sample of 3rd year female and male students, comprising 10 girls and 23 boys. The majority of the sample, with 80% of girls and 30.4% of boys, reported never participating in any activity related to Palaeontology. Among those who did, 43.5% of boys watched a television programme, documentary, or film. For girls, 20% listened to a podcast about Palaeontology, and 10% said they had watched a TV program, documentaries and films and used apps or games on their electronic devices related to the subject. Boys also use apps and games related to Palaeontology (30.4%), and 26.1% watch YouTube videos about the

subject, with 17.4% having listened to someone talk or watched someone give a talk about it on the radio. Notably, 4.3% of boys selected the option “Other”, adding toys.



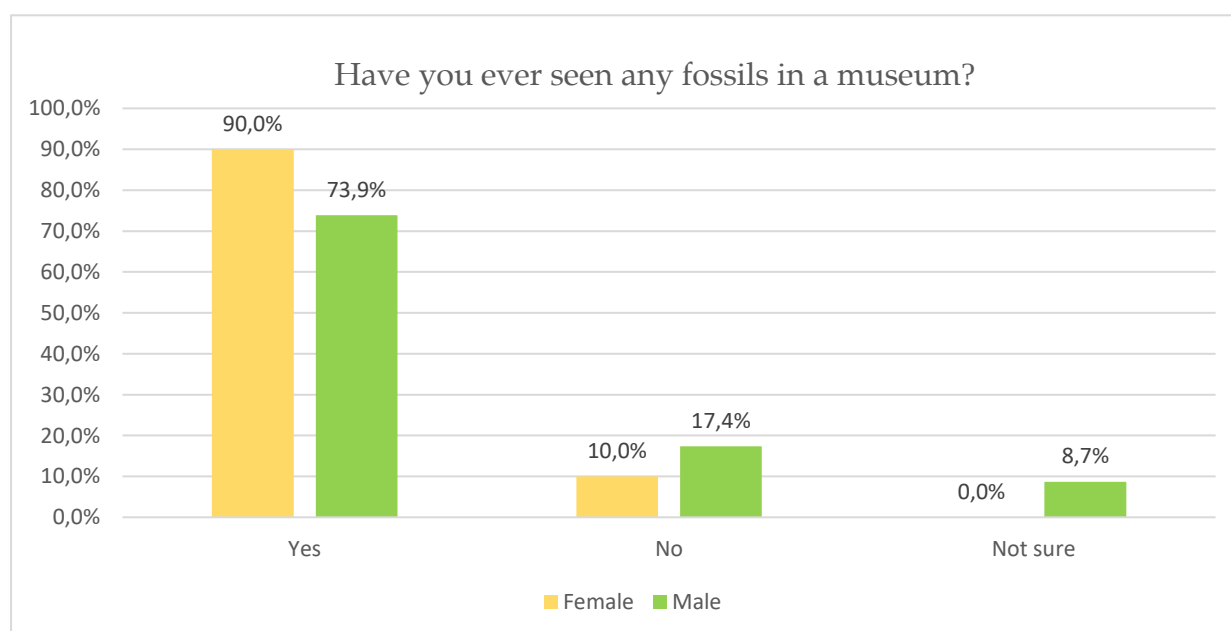
Graphic 182: Representation of the answers to question number two of the Life Sphere Broader Society in 3rd year Irish students.

For this graphic, the sample comprises students who responded to question 1, consisting of those who have participated in activities related to palaeontology, totalling 2 girls and 16 boys. Notably, 50% of girls and 37.5% of boys have learned something new regarding palaeontology when participating in palaeontologic activities, the same percentage as those who replied that they did not, and 25% of boys expressed uncertainty.



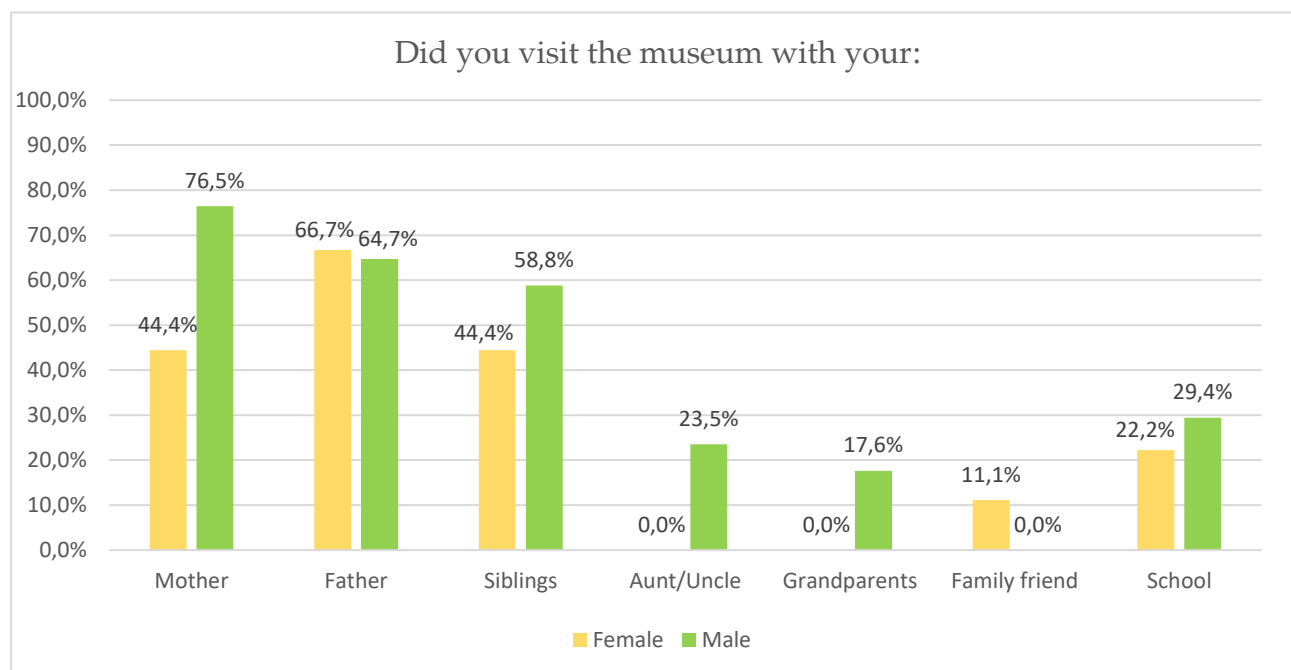
Graphic 183: Representation of the answers to question number three of the Life Sphere Broader Society in 3rd year Irish students.

For this graphic represents the sample of 3rd year female and male students, comprising 10 girls and 23 boys. Notably, the answer with the biggest percentage for both genders is “No” (70% of girls and 73.9% of boys). Only 10% of girls and 26.1% of boys indicate that they follow online accounts or social media pages about Palaeontology, while 20% of girls remain unsure.



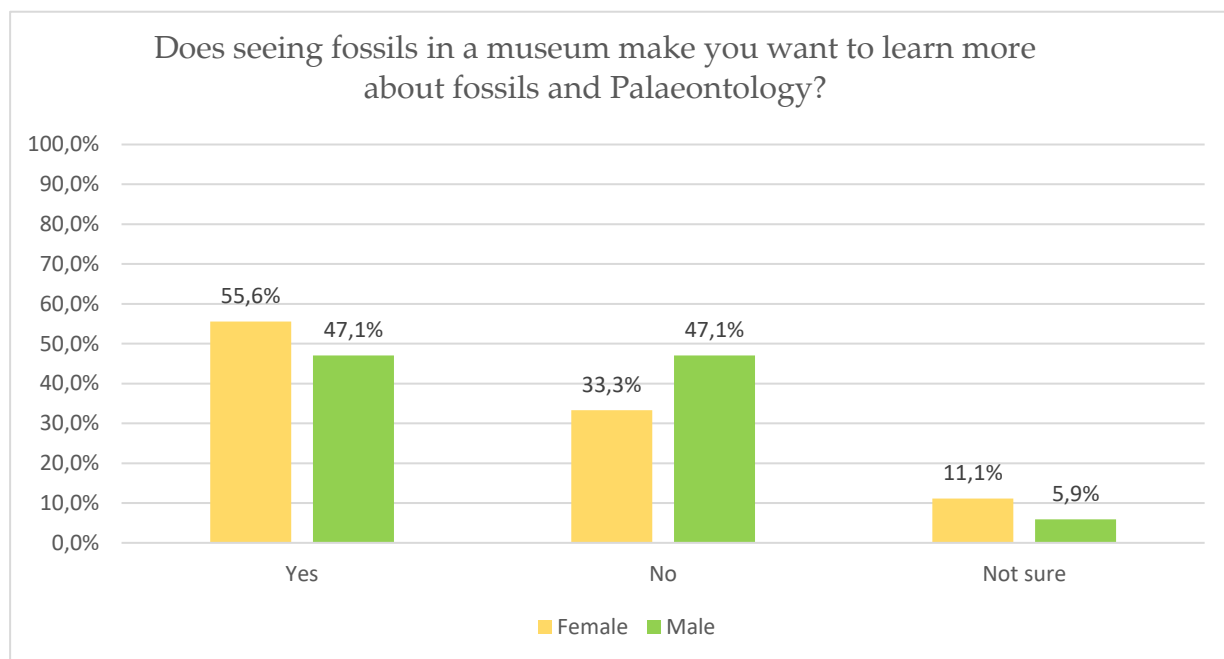
Graphic 184: Representation of the answers to question number four of the Life Sphere Broader Society in 3rd year Irish students.

Graphic 184 displays the overall count of students who participated in the surveys: 10 girls and 23 boys. The predominant response among female and male students when asked if they have ever seen fossils in a museum is “Yes”, with 90% of girls and 73.9% of boys selecting this option. A smaller percentage, 10% of girls and 17.4% of boys stated that they had never seen fossils exposed in a museum, while 8.7% of boys expressed uncertainty.



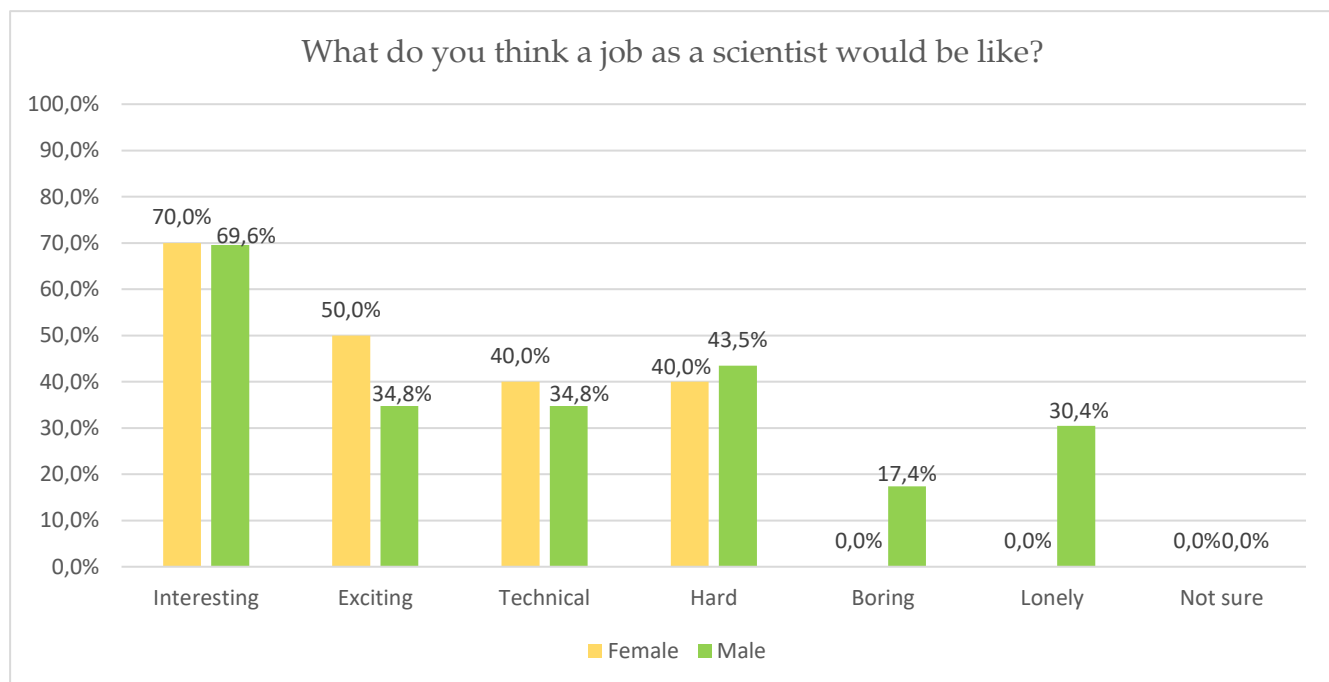
Graphic 185: Representation of the answers to question number five of the Life Sphere Broader Society in 3rd year Irish students.

For graphic 185, the sample of students consisted of those who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 9 girls and 17 boys. The most common answer when asked with whom students visited the museum for boys is “Mother” (76.5%), while for girls is “Father” (66.7%). Girls also often visited with their siblings and mothers (44.4%). For male students, the second most common family member with whom they usually visit museums is their father (64.7%), followed by their siblings (58.8%). The school was also a commonly selected answer, with 22.2% of girls and 29.4% of boys selecting this option.



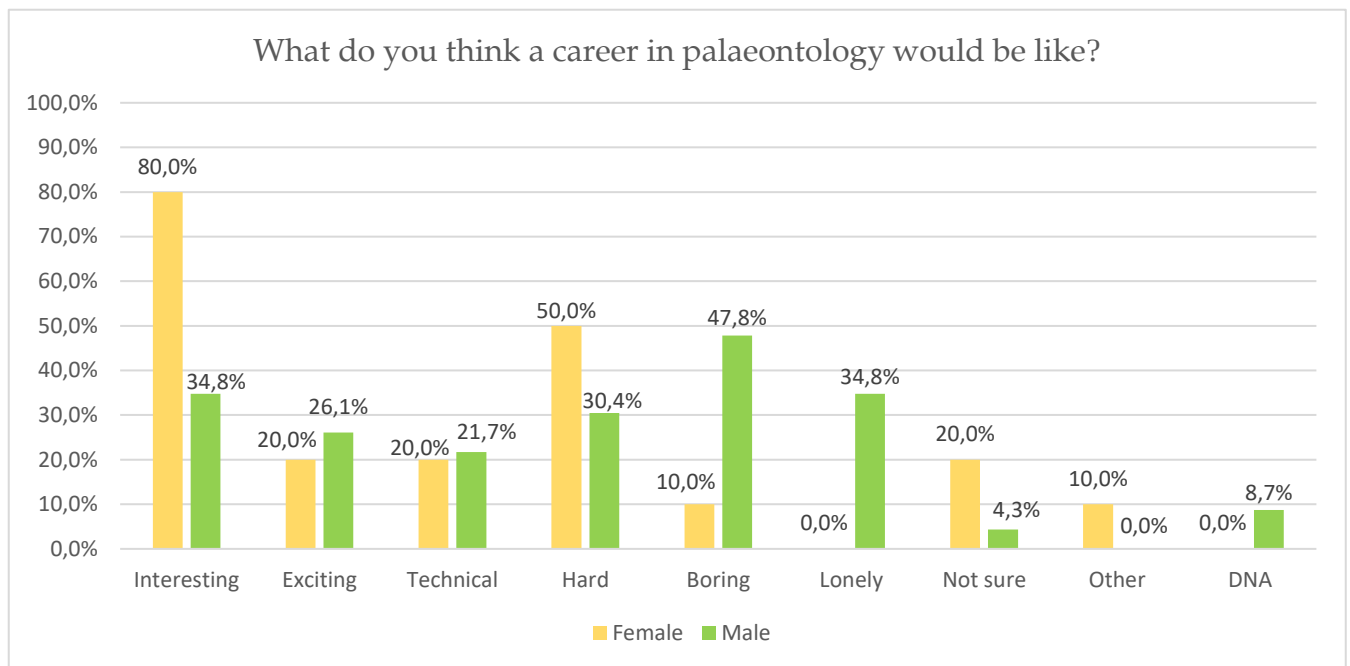
Graphic 186: Representation of the answers to question number six of the Life Sphere Broader Society in 3rd year Irish students.

Graphic 186 displays the sample of students who replied affirmatively to question 4 of the Broader Society Life Sphere, totalling 9 girls and 17 boys. More than 50% of girls (55.6%) responded “Yes”, the same as 47.1% of boys. A similar percentage of boys (47.1%) said that seeing fossils in a museum does not make them more interested in the subject, and 33.3% of girls agree. Furthermore, 11.1% of girls and 5.9% of boys remained unsure.



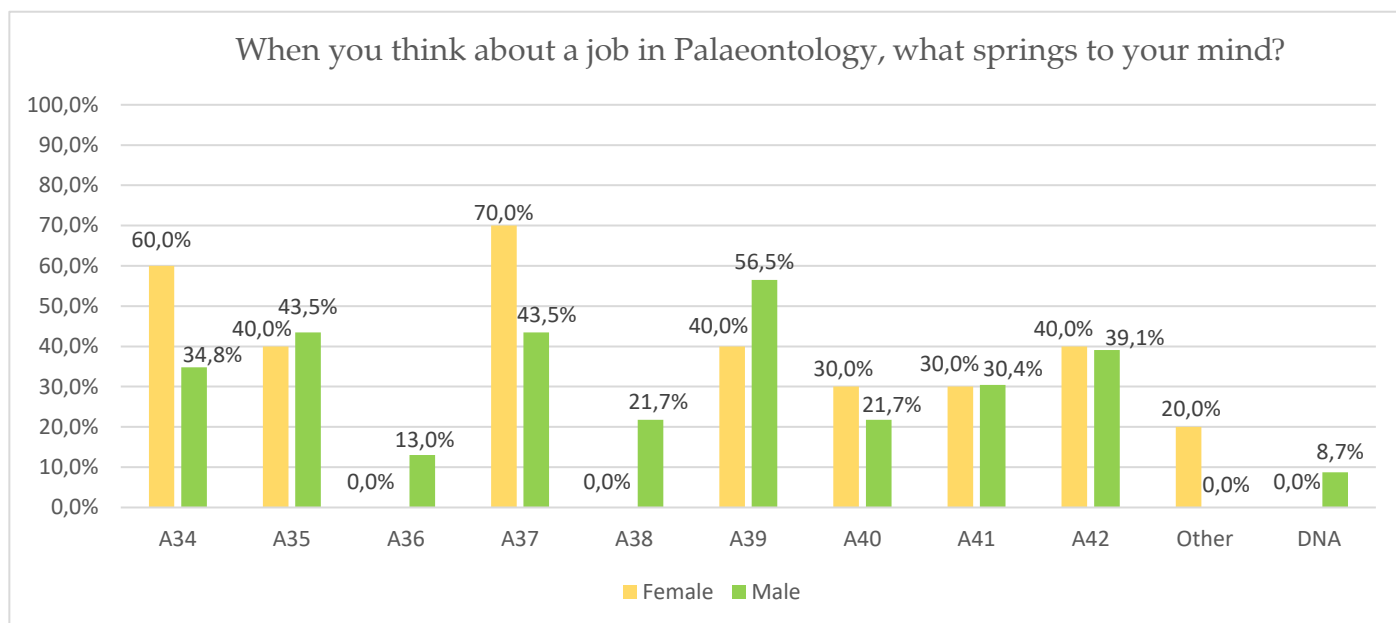
Graphic 187: Representation of the answers to question number seven of the Life Sphere Broader Society in 3rd year Irish students.

Graphic 187 displays the overall count of students who participated in the surveys: 10 girls and 23 boys. When asked if students knew what a job as a scientist would be like, the most selected option for both genders was Interesting (70% for girls and 69.6% for boys), followed by Exciting for girls (50%) and for boys the second most selected option was Hard (43.5%). Additionally, 40% of girls think it would be technical and hard and 34.8% of boys think it would be exciting and technical. Moreover, 30.4% of boys said it would be a lonely job, and 17.4% mentioned being a boring career.



Graphic 188: Representation of the answers to question number eight of the Life Sphere Broader Society in 3rd year Irish students.

Graphic 188 illustrated the total number of students who participated in the surveys: 10 girls and 23 boys. Regarding the question about what students think a job as a palaeontologist would be like, 80% of girls think it would be interesting, with only 34.8% of boys agreeing. Hard was selected by 50% of girls and 30.4% of boys. The most selected option for boys is Boring (47.8%), and 10% of girls agree. Additionally, 20% of girls think it would be exciting and technical. For boys, Lonely was selected by 34.8%, followed by 26.1% selecting Exciting, and 21.7% selecting Technical. In this question, 10% of girls selected the option “Other”, adding that it would be an intricate and detailed job.



Graphic 189: Representation of the answers to question number nine of the Life Sphere Broader Society in 3rd year Irish students.

Description

A34 Working in a lab a lot

A35 Going on field trips a lot

A36 Meetings all-day

A37 Excavating and preparing fossils

A38 Work alone

A39 Work with a team

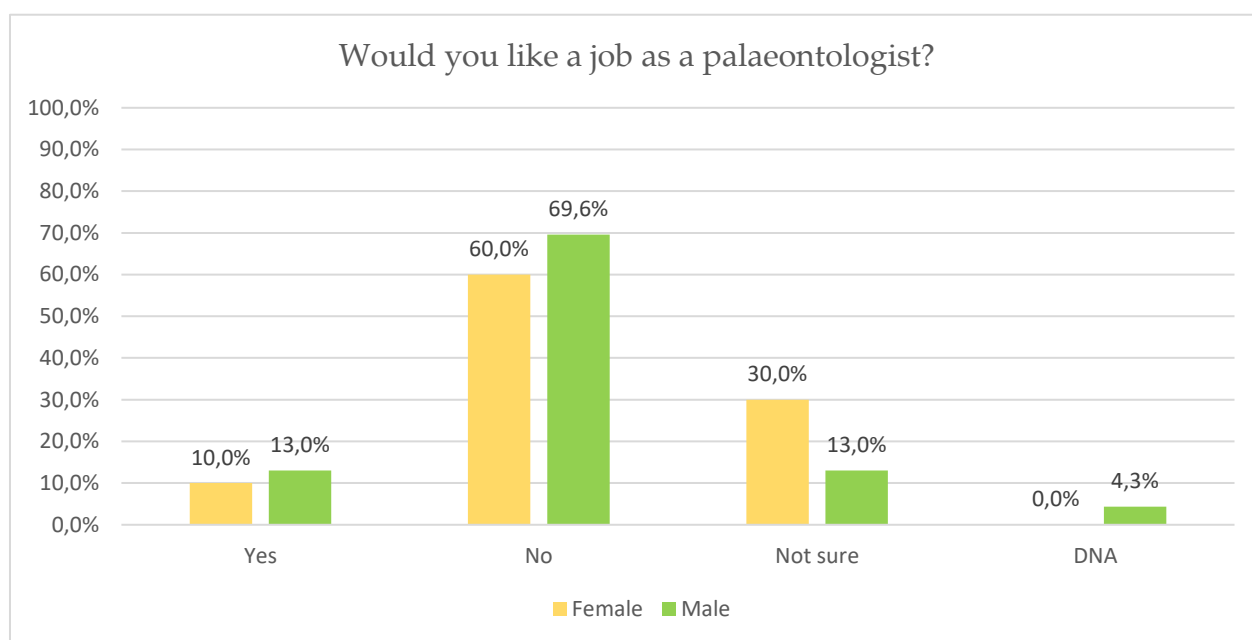
A40 Drawing dinosaurs and other extinct animals

A41 Giving lectures and talks

A42 Working in a museum

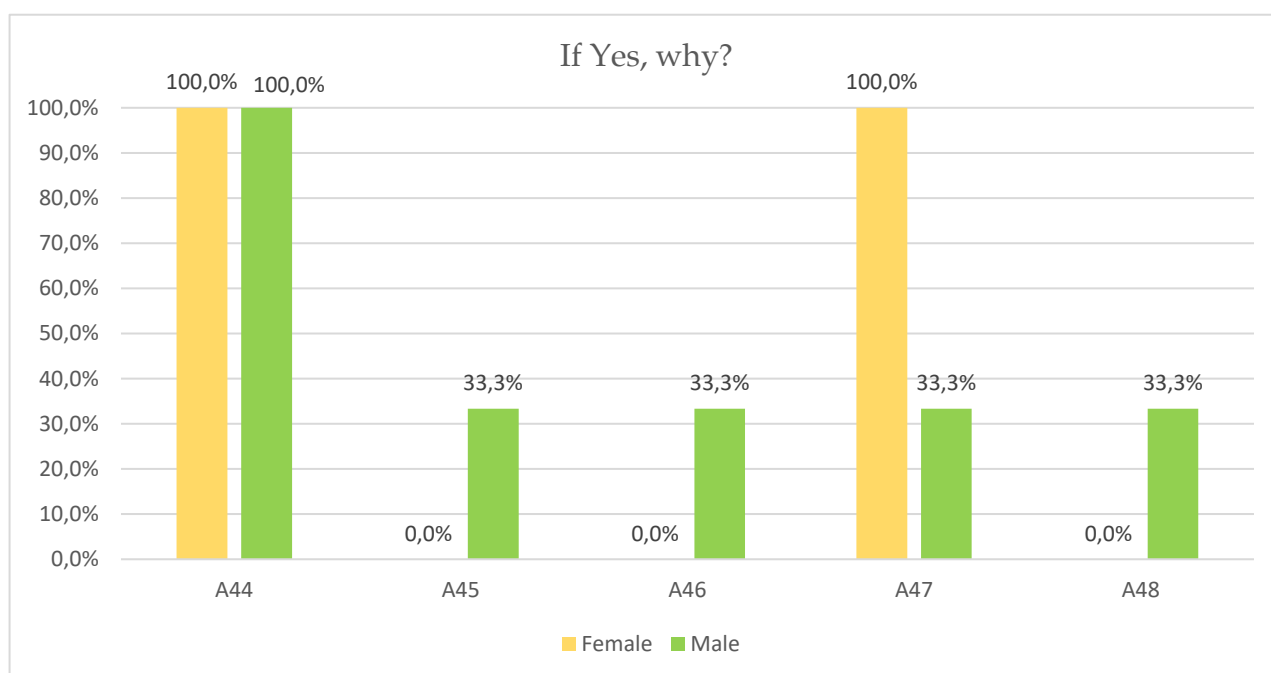
DNA Did Not Answer

Graphic 189 displays the overall count of students who participated in the surveys: 10 girls and 23 boys. The most common response when asking students what they think a job as a palaeontologist would be like for girls is excavating and preparing fossils, with 70% selecting this option, while for boys, 56.5% think it is working in a team. The second most common answer for girls is working in a laboratory regularly (60%), and for boys is tie between excavating and preparing fossils and frequently going on field trips (43.5%). The third most regular answer for girls is going on field trips, working in a team, and working in a museum (40%), while for boys, it is working in a museum (39.1%). Regarding the option “Other”, female students (20%) cited palaeontologists also discover fossils and one added “None of the above”.



Graphic 190: Representation of the answers to question number ten of the Life Sphere Broader Society in 3rd year Irish students.

Graphic 190 displays the total sample of students who replied to the surveys, totalling 10 girls and 23 boys. When asked if they would like a job as a palaeontologist, the predominant response for both genders is “No,” with 60% of girls and 69.6% of boys selecting this option. This is followed by “Yes,” with 10% of girls and 13% of boys selecting this answer and 30% of girls and 13% of boys remaining uncertain.



Graphic 191: Representation of the answers to question number eleven of the Life Sphere Broader Society in 3rd year Irish students.

Description

A44 I want to learn more about extinct animals and plants

A45 I want to learn more about extinctions

A46 I like dinosaurs

A47 I like fossils

A48 I think learning about the past is fascinating

Graphic 191 showcases the subset of students who replied positively to question 10 of the Broader Society Life Sphere, amounting 1 girl and 3 boys. The sole female participant indicated a desire to pursue a career in palaeontology, motivated by her interest in extinct animals and plants and a like for fossils. Among the male students, 100% were interested in learning about extinct animals and plants. Additionally, 33.3% cited a specific interest in learning about extinctions, a fascination with dinosaurs and fossils and a general interest in studying the past.



Graphic 192: Representation of the answers to question number twelve of the Life Sphere Broader Society in 3rd year Irish students.

Description

A50 I have never thought about it

A51 I am not interested in planet Earth's past

A52 It's boring

A53 It's too hard

A54 I don't like the subjects

DNA Did Not Answer

For graphic 192, it was considered the total number of students who replied "No" or "Not sure" to question 10; this includes 9 girls and 19 boys. The primary reason cited for both genders (77.8% of girls and 57.9% of boys) for not aspiring to become palaeontologists is that they have never thought about it. The second most common reason is boredom (36.8% of boys and 22.2% of girls). The same percentage of girls (22.2%) also mentioned a lack of interest in planet Earth's past, along with 5.3% of boys. The third most common option for boys is being too difficult and not enjoying the subjects associated with the field (15.8%), this last reason was also selected by 11.1% of girls.

Annexe X - Transcription of Portuguese Focus groups

ANSELMO DE ANDRADE

7th CLASS | 20/03/2023 | 5 STUDENTS (2M & 3F)

Researcher: Ok, pronto, está a gravar. Hoje é dia 20, não é?. Então, a primeira pergunta que eu tenho aqui é o que é que vocês acham que é a Paleontologia? O que é que surge na vossa mente quando pensam em paleontologia?

Student 1: Dinossauros.

Student 4: Dinossauros.

Researcher: Boa. Mais alguma coisa?

Student 3: Coisas mais antigas.

Student 5: E fósseis.

Researcher: Okay, e o que é que vocês acham que são fósseis?

Student 4: São restos do corpo dos dinossauros.

Researcher: Só dos dinossauros?

Student 3: Não, todos. De animais pré-históricos.

Researcher: Só dos ossos?

Student 2: Pegadas também...

Researcher: Ok, boa. E o que é que vocês acham que faz um paleontólogo?

Student 4: Estuda.

Student 3: Estuda os vestígios dos ossos, para saber há quanto tempo foi, mais ou menos. E o que é que lhe aconteceu?

Researcher: E acham que é mais um trabalho de laboratório, como os típicos cientistas? Ou é mais um trabalho lá fora?

Student 4: Não, mais para a natureza.

Student 1: Lá fora.

Student 3: Sim, mais a escavar os dinossauros.

Researcher: É? boa, ok. Vocês alguma vez foram a um museu? Sei que vocês já aprenderam sobre fósseis na escola.

Student 4: O máximo que eu fui foi ao pavilhão do conhecimento, onde estava a exposição dos dinossauros.

Researcher: E gostaste?

Student 4: Sim.

Researcher: E o que é que achaste? Achas que depois de visitares, ficaste com o interesse em saber mais?

Student 4: Sim, até é engraçado.

Researcher: E vocês? (To students 1 and 2) Já alguma vez foram a um museu?

Student 2: Eu penso que sim, mas era pequena.

Student 1: Eu já fui, não cá em Portugal, mas já fui a um museu, normalmente com os ossos de dinossauros, e essas coisas assim.

Researcher: E gostaste?

Student 1: Gostei, era pequenina, mas sim, lembro-me. E gostei imenso.

Researcher: Ficaste um bocadinho interessada?

Student 1: Sim. Já lá, fui mais do que uma vez.

Researcher: Ok, fixe. Então eu sei que vocês já deram a matéria de fósseis na escola. Quando vocês dão essa matéria na escola, pensam tipo, mais uma matéria para estudar, ou é, ah, isto é até interessante, vou para casa e vou...

Student 4: Primeira opção.

Researcher: É? Primeira opção?

Student 1: Não, eu prefiro o corpo humano.

Researcher: Vocês já viram algum filme relacionado com a paleontologia?

Student 3: Sim.

Researcher: E o que é que viste?

Student 3: O Jurassic Park.

Student 5: Eu já não me lembro que filme foi, mas tipo, estavam a escavar e depois tinham um pincel para limpar os ossos.

Student 3: Ah, e também já comprei uma cena dessas e fiz. (Meaning a toy with a plastic dinosaur skeleton inside and we have to dig to find the skeleton).

Researcher: E gostaste de fazer isso? Foi fixe?

Student 3: Eu até tinha os óculos, o pano... E está feito.

Researcher: E vocês já fizeram alguma coisa assim parecida? (To students 1, 2 and 5)

Students 1, 2 and 5 nod in confirmation.

Researcher: Já?

Researcher to student 5: O que é que viste?

Student 5: O Jurassic Park e também... essas experiências. Já andei a escavar e assim.

Student 4: Lá no pavilhão havia uma parte que estavam os ossos enterrados na areia e nós andávamos lá.

Student 1: Eu não me lembro onde foi, mas sei que foi como na escola antiga e que nos levaram para um sítio onde tínhamos uma caixa de areia, mais ou menos. Tínhamos que encontrar os ossinhos pequeninos e tínhamos que os limpar e escavar e depois tínhamos que ver o que é que eram.

Researcher: E achaste piada?

Student 1: Eu gostei, no caso, acho engraçado. Uma atividade gira.

Researcher: E assim, a nível de videojogos, vocês não têm nada com dinossauros?

Student 4: Eu não gosto muito de jogar prefiro as redes sociais.

Researcher: E não seguem ninguém que fala sobre fósseis nas redes sociais, não?

Student 4: Não.

Student 1 and 2: Não.

Researcher: Quando vocês, por exemplo, vêem estes filmes e fazem estas escavações, vocês aprendem alguma coisa assim da paleontologia que, por exemplo, não aprenderam na escola?

Student 2: Sinceramente, não.

Student 3: Eu às vezes Sim.

Student 4: Depende, às vezes surge curiosidade. Às vezes, não.

Researcher: Presumo que dependa de quem está a explicar ou ensinar.

Student 4: É verdade. Se for mais seca, não.

Researcher: Se for mais interativa, vocês gostam mais.

Student 3: Sim.

Researcher: Ok. E a nível do vosso dia-a-dia, já alguma vez repararam em coisas relacionadas com a paleontologia? Assim, por exemplo, nas camisolas estampadas com dinossauros? Já viram fósseis aqui na escola?

Student 3, 4 and 5: Já, já.

Student 1: Sim, na escola.

Student 3: No pé do guia. Não me lembro se foi contigo. Nós encontramos uma pedra e depois tinha uma cena que parecia um caracol.

Student 2: Quando nós fomos à Mata dos Medos, nós também vimos lá fósseis.

Student 4: Pois é, lá também há.

Researcher: E gostaram?

Student 3: Sim. É bom correr na natureza.

Student 4: Aquilo foi bem fixe.

Student 6: Nós andávamos a subir as dunas. Nós fizemos corridas todas com a senhora e andávamos a subir as dunas.

Researcher: E vocês acham que é importante aprender paleontologia?

Student 1: Sim.

Student 5: Depende do gosto da pessoa.

Researcher: Sim, porquê?

Student 1: Porque eu acho interessante.

Researcher: Só porque é interessante?

Student 2: Para conhecermos mais o passado.

Researcher: Okay.

Student 4: Eu acho importante porque há algumas coisas que podem já ter acontecido há muitos anos atrás. Nós estudamos e depois estamos preparados para o que pode acontecer no futuro.

Student 3: E também, por exemplo, os danos que causou essa pré-história para nós.

Researcher: E tu achas que é importante? (To student 3)

Student 3: Sim.

Researcher: Porquê? Porque... Elas já disseram, não é? Foi assim que se descobriu. Que o meteoro caiu. Também se sabe isso.

Student 4: Nós estivemos a dar há pouco tempo. Quando antes só havia um continente e um oceano. Ah, é. A Pangeia e a Pantalassa.

Researcher: Vocês têm alguém assim na vossa família? Ou mesmo fora da família? Um professor? Alguém que vocês conheçam que é da Ciência? Que vos inspira?

Student 2: Não

Student 1: Não.

Student 3: Sim, a minha avó que é Jurássica.

Researcher: Não tens ninguém assim que te inspira? (To student 5)

Student 5: Não.

Researcher: Vocês têm alguma ideia do que querem seguir no secundário?

Student 1: Eu quero ir para ciências.

Student 3: Provavelmente.

Student 2: Eu não faço a mínima.

Student 4: Ah, sim, eu também. Mas eu tenho uma ideia. Eu tenho um irmão mais velho.

Researcher: E esse irmão mais velho é de que área?

Student 4: Do décimo.

Researcher: E ele gosta?

Student 4: Ele não gosta da escola no geral. (Laughing)

Researcher: Ok, eu ia vos perguntar se vocês, tendo alguém da ciência, que vos inspirava, vocês também queriam fazer alguma coisa relacionada com a área? Mas, pelo visto, não tem assim ninguém.

Student 1: Só há uma menina que andava cá na escola que era minha amiga. Quer dizer, ela está a melhorar as notas porque ela quer ser médica. Mas, pronto, ela inspira muito. Ela tira boas notas. E ela mesmo assim não conseguiu entrar no que queria. Mas ela agora está a melhorar para entrar no que quer mesmo.

Researcher: Muito bem. Vocês têm alguma pergunta para me fazer?

Students 1 and 4: Não.

Researcher: Okay, sendo assim podemos terminar por aqui. Muito obrigada pela vossa participação. Vou terminar de gravar e deixar-vos ir.

Student 3: Obrigada.

Student 4: Obrigada.

CARLOS GARGATÉ

7th CLASS | 19/03/2024 | 5 STUDENTS (5 F)

Researcher: Então, a primeira pergunta é, o que é que vocês pensam que é paleontologia?

Student 4: Acho que é o estudo dos fósseis.

Student 5: Eu também.

Student 3: Eu também.

Researcher: Bom, assim, mais alguma coisa que surge na mente? É só, tipo, estuda só os fósseis?

Student 1: Não, acho que estuda as pedras. Não sei.

Student 5: O sol.

Student 3: Eu acho que é, tipo, as marcas. Os vestígios.

Student 4: Sim, os vestígios que nós deixávamos. Os animais.

Researcher: Boa. E o que é que acham que é um paleontólogo? Tipo, o que é que um paleontólogo faz?

Student 4: Eu acho que ele pode, tipo, ir para o terreno, tipo, fazer escavações e essas coisas. Ou também pode estar, tipo, em laboratório a ver a idade dos fósseis.

Student 3: Eu acho que é, tipo, estuda e vê de qual é o animal e isso.

Student 5: Era isso que eu ia dizer.

Student 1: É igual. Também.

Researcher: Vocês alguma vez foram com a escola a algum museu? Ou a algum sítio onde têm, assim, pegadas de dinossauros ou coisas de dinossauros?

Student 5: Não.

Student 4: Sim, fomos ao... Dinoparque.

Student 3: Sim.

Student 2: Foi muito fixe.

Researcher: E foram para a escola? Foi fixe? Gostaram?

Student 4: Fomos no primeiro ciclo.

Student 2: Eu fui este ano a um museu natural que tinha, tipo, animais e, tipo, os fósseis e isso.

Researcher: E foi aqui em Lisboa?

Student 2: Não, não. Foi na Escócia.

Researcher: E gostaste?

Student 2: Sim, também.

Researcher: Quando vocês vão, por exemplo, ao Dinoparque com a escola, vocês ficam interessados e curiosos da paleontologia ou é, tipo, um dia bem passado?

Student 1: Eu fico curiosa.

Student 4: Sim, também.

Student 3: Mais ou menos.

Student 1: Por exemplo, por causa das pegadas de dinossauros.

Student 4: Sim.

Student 3: Algumas coisas fico curiosa, outras não.

Researcher: Outras não são tão interessantes para ti?

Student 3: Sim.

Researcher: Deixa cá ver a próxima pergunta. Por exemplo, quando foram ao Dinoparque, aprenderam alguma coisa diferente que não aprenderam na escola?

Student 5: Sim.

Student 4: Sim.

Student 1: Eu acho que foi mais... Como nós éramos do primeiro ano, acho que foi mais lá. Nós aprendemos mais este ano do que no Dinoparque.

Researcher: Acham que, por exemplo, era bom agora ir ao Dinoparque com as coisas que vocês estudaram, que agora iam compreender melhor as coisas.

All students: Sim.

Student 3: Mas nós, naquela altura, nós aprofundámos mais a parte dos dinossauros. Este ano, quando demos os fósseis, não foi tão sobre os dinossauros.

Student 5: E também, aquilo tinha várias atividades para brincarmos. E era mais para brincar, assim, sem estudar.

Student 5: E os nossos pais levaram-nos a um museu, acho que em Lisboa, e que depois nós fomos as primeiras a escavar, a tentar encontrar os ossos.

Researcher: E vocês acham piada a isso?

Student 1: Sim. Piada a escavar.

Student 4: Eu acho piada a tentar escavar e encontrar os ossos.

Researcher: Boa. Vocês, têm livros em casa ou lêem livros de paleontologia? Viram filmes, documentários?

Student 2: Eu tenho.

Student 5: Filmes não mas há o Jurassic park.

Student 3: Eu tenho uma enciclopédia. Eu tenho uma enciclopédia, mas, tipo, eu não comecei a ler.

Student 5: E nós começámos, pelo menos eu comecei a ver, eu não acabei, uma série nova que é o Planeta Azul. E que fala de animais.

Student 1: Se houver dinossauros, eu gosto.

Researcher: Então tu és amante de dinossauros?

Student 1: Não, não é amante, mas eu gosto. Porque depois eles, às vezes, começam a apanhar as pessoas.

Researcher: Então, Jurassic Park, Jurassic World, esse é mais o teu tipo de filme?

Student 1: Sim.

Researcher: Fixe. E quando vocês vêm ou lêem, qualquer coisa relacionada com paleontologia, tipo, dinossauros ou animais extintos, faz-vos querer, ver mais coisas?

Student 3: Depende.

Student 4: Sim, depende. Depende das coisas. Por exemplo, a professora, nós este ano, quando demos os fósseis, demos um que era os fósseis vivos, que é aqueles que, pronto, e nós demos, nós vimos um, a professora, mostrou-nos um, que era um peixe, e eu achei isso interessante.

Researcher: Okay.

Student 4: E até fui ver, tipo, se havia mais e tal. Fiquei interessada.

Student 5: E nós estamos a fazer, agora, uma Escala do Tempo que está ali, e nós estamos a reconstruir, porque depende da escola e de outras coisas, e é muito interessante estar a reconstruir os animais.

Researcher: Fixe. E concordo, acho que é interessante reconstruir os animais agora.

Researcher: Vocês participam todos na parte da Escala do Tempo?

Student 1: Sim estamos a todos.

Student 3: São os sétimos anos todos.

Student 4: Não, é só os sétimos anos de professora.

Researcher: Então é a professora que vos obriga a fazer estas coisas.

Student 2: Não, mas é divertido.

Student 1: Porque assim não temos de fazer testes.

Student 2: É um treino.

Researcher: E qual é que é o vosso filme favorito relacionado com a Paleontologia?

Student 1: Jurassic Park.

Student 2: Hum...todos.

Student 3: Nunca vi.

Researcher: Então e a Idade do Gelo, já viram?

Student 3: Ah sim! Então a Idade do Gelo.

Student 2: Eu não vi.

Student 4: Eu também não vi.

Student 2: Eu vi um do ...Eu não sei que canal é que é. Mas era tipo... Eu acho que era do Parque.

Researcher: Que é o quê? Era um filme de dinossauros?

Student 2: Tipo uma série. Era aquele tipo do... do comboio.

Researcher: É a do comboio de dinossauros.

Student 2: Sim, foi esse, fui muito fixe.

Student 1: Eu já vi o Jurassic Park. E a série.

Researcher: Sim, o Campo cretácico.

Student 1: Sim! Eu já vi todos.

Researcher: É muito fixe.

Student 3: É uma série para crianças?

Student 1: É. Sim.

Researcher: Mais ou menos...

Student 1: Mas eu não sei qual é o meu favorito do Jurassic Park, são todos bué fixes.

Researcher: Acham que é importante aprender a paleontologia?

All students: Sim.

Researcher: Porquê?

Student 2: Para depois descobrimos as espécies que existiam antes no nosso passado.

Student 1: Ya, exato.

Student 4: Porque daqui a muitos anos vão haver muitas espécies que agora vão estar distintas. E depois se... E depois se não estudarem... Se não estudarem essas espécies, as pessoas do futuro não vão saber. Eu acho que é isso.

Researcher: Então, o que é que achas que é importante?

Student 3: Eu? Ah, então, para sabermos mais sobre os animais e entendermos como que é que eles vivem. Não sei.

Researcher: Algumas de vocês têm assim alguém na ciência que acham interessante? Tipo, alguma pessoa. Tipo, um professor.

Student 2: O meu pai. O meu pai, ele é... Ele foi para a ciência. Ele é engenheiro.

Só que ele é químico. Ele estudou isso. Mas ele tipo... Sim.

Researcher: Química é ciência.

Student 3: Eu não sei se alguém da minha família é.

Student 5: Conta trabalhar no jardim zoológico. No jardim zoológico e no oceanário?

Researcher: Sim, sim.

Student 5: Portanto, eu tenho um tio que trabalha lá.

Student 3: Eu tenho uma tia que é veterinária.

Student 2: Eu tenho uma tia que trabalha numa universidade de ciências e ela tipo faz uns estudos lá.

Researcher: Fixe. E por exemplo, teres a tua tia lá faz-te ficar mais interessado com a ciência ou tu pensas que é muito confuso... que não é para ti.

Student 3: Não. Eu quero ser engenheira. Só não sei daquilo. Só que tipo... Eu só sei que ela trabalha na universidade e faz uns estudos. Só que eu não sei o que é que ela faz.

Researcher: E em casa não costumavas falar.

Student 4: A minha mãe é engenheira do ambiente. E ela tipo... Ela não trabalha muito nessa área dos fósseis. Mas também faz mais que saber sobre ciências. Não especificamente sobre Paleontologia, mas...

Student 5: Eu adoro chegar a casa das minhas aulas de ciências e começar a falar e os meus pais já sabem. Os meus pais já sabem o que é que eu estou a dizer e depois eles compreendem.

Researcher: Sim.

Student 5: Compreendem o que eu estou a falar.

Researcher: Sentes que não precisas de estar a explicar e consegues ter uma conversa em que todas as pessoas percebem.

Student 2: E acho que se eu aprender alguma coisa fixe na aula de ciências, se nós tivermos feito alguma coisa, eu digo aos meus pais e depois eles começam a falar sobre isso.

Researcher: E eles percebem. Okay. E quando vocês aprendem alguma coisa nas aulas de ciências, assim... Dá-vos interesse? Vocês queriam saber mais e talvez pensar numa carreira dentro da ciência?

Student 1: Não.

Student 3: Pensar numa carreira? Faz-me querer saber mais. Mas carreira não.

Student 4: Carreira...

Student 2: Eu não gosto muito de fazer essas coisas.

Student 5: Se quisesse até ia para a ciência e não para a paleontologia, era só para fazer experiências. Aquelas experiências assim.

Researcher: Em laboratório...essas são fixe.

Student 5: Essa é a questão.

Researcher: Vocês não têm noção do que é que querem ser quando terminarem o secundário?

Student 2: Eu tenho.

Student 3: Eu também.

Student 5: Eu não. Eu não tenho noção.

Student 3: Agora eu penso que eu quero seguir ciências e tirar algum tipo de engenharia, mas não sei.

Student 4: Eu acho que gostava de engenharia biomédica, mas...

Student 3: Também eu.

Student 4: Eu penso muito em biomédica e química.

Student 5: Eu quero... Já disse que pode mudar. Mas eu quero ser chefe de cozinha em um restaurante.

Researcher: Que fixe.

Student 1: Eu quero ir com o melhor amigo para informática.

Student 2: Então, eu queria ir para o designer e tipo... Imagina, eu tipo... Eu, todos os meses, eu mudo o meu quarto.

Researcher: Isso é bom. Todos os meses.

All other students at the same time: Todos os dias!

Researcher: Ok, meninas. Eu já não tenho mais perguntas. Não sei se vocês me querem fazer alguma pergunta e, entretanto, eu vou desligar o gravador.

ANSELMO DE ANDRADE

8th CLASS | 20/03/2024 | 6 STUDENTS (5F & 1M)

Researcher: Apresento-me já. O meu nome é Andreia, eu sou estudante da NOVA, da FCT, que é aqui no Monte da Caparica, e estou a fazer um mestrado em Paleontologia. A minha dissertação de mestrado, o tema é quais é que são os fatores que influenciam os jovens da vossa idade a escolher as áreas das Ciências, e mais especificamente, claro, a parte da Paleontologia, e por isso estou a ir às escolas, umas escolas faço os questionários, outras escolas que faço grupos de foco, que é o que nós estamos a fazer hoje.

Researcher: Então, a primeira pergunta que eu tenho aqui é, o que é que vocês acham que é a Paleontologia? O que é que surge na vossa mente quando pensam em Paleontologia?

Student 1: Estudar sobre a Antiguidade, ossos...

Student 2: Fósseis.

Student 1: E um bocadinho da Biologia.

Student 4: Animais, seres vivos, plantas, animais que já estiveram na Terra, espécies passadas.

Student 1: O que se passou antigamente, sim.

Researcher: Boa, e quando tu falas em fósseis, o que é que achas que são fósseis?

Student 2: Vestígios de animais que já cá tiveram presentes.

Student 1: Animais e não só.

Student 2: Pronto, sim, animais. Seres vivos.

Researcher: Sim, plantas também são seres vivos, certo? Boa, e o que é que vocês acham que faz um paleontólogo?

Student 1: Estudar o passado e os vestígios que os seres vivos deixaram no passado.

Student 4: E viaja pelo mundo também para estudar, porque em certos sítios havia umas espécies que não haviam outras, então viaja pelo mundo para estudar e encontrá-las.

Researcher: Boa, gosto dessa resposta. E acham que também é um trabalho mais de laboratório, como vocês têm aqui na escola, ou é mais de campo?

Student 5: Não, é mais estudar e depois passa para outros.

Student 1: Eu acho que começa no campo e depois tem que ir para o laboratório e estudar.

Student 2: Exato, sim.

Researcher: Ok, ok, boa. Eu sei que vocês já tiveram a parte dos fósseis e a parte da Geologia no sétimo ano, não foi? Quando vocês aprenderam isso na escola, acharam que era interessante, ou nem por isso? É só mais uma coisa para estudar?

Student 1: Não, porque faz parte um bocadinho da história.

Student 4: Era fixe, mas também tinha uns prós e contras.

Student 2: Sim, mais ou menos.

Researcher: Mais ou menos, porquê?

Student 2: Porque, sei lá, havia algumas coisas que era preciso decorar, que não eram muito interessantes de saber.

Researcher: E vocês acham o mesmo? (To student 3 and 5)

Student 5: Sim.

Student 1: Havia coisas que acho que eram desnecessárias. Mas, no fundo, foi interessante.

Researcher: Ok. Algumas coisas interessantes, ou talvez nem por isso.

Student 1: Como em tudo.

Researcher: Exatamente. E vocês alguma vez foram a um museu com fósseis expostos, ou alguma coisa assim do género, relacionada com a paleontologia?

Student 3: Não.

Student 6: Não me lembro.

Student 4: Acho que não.

Student 2: Fora da escola? Não me lembro.

Student 1: Com a escola, não.

Researcher: Com a família? Com amigos?

Student 1: Eu acho que não me lembro.

Student 5: Se eu fui a um museu, acho que sim, mas...

Student 6: Não sei. Não sei se eu fui a um museu.

Researcher: Okay.

Student 5: Era um museu com estátuas, vários fósseis...

Student 1: Um museu de história natural...

Researcher: Já lá foste? (To student 1)

Student 1: Sim.

Researcher: E gostaste?

Student 1: Sim, já foi há algum tempo.

Researcher: Achaste interessante?

Student 1: Sim.

Researcher: Quando vocês vão, assim, a estes museus, pronto, sei que alguns de vocês nunca foram, mas quando vocês vão a estes museus, ficam, interessados, querem aprender mais, ou nem por isso?

Student 4: Sim

Student 1: Depende do museu que tivermos a ir. Depende se tivermos a achar interessante, ou...

Student 2: E depende se for com a escola...

Student 3: Exato.

Student 1: E depende também se for um guia a explicar-nos tudo, do que irmos sozinhos, porque não temos bem uma formação, e não sabemos tudo.

Student 4: Depende do tipo de museu, se é um museu de arte, se é um museu de ciência...

Student 2: Exatamente.

Researcher: Por exemplo, acham que um museu de ciência que fosse mais interativo, puxava-vos mais do que simplesmente ter coisas expostas?

All student: Sim.

Student 2: Somos crianças, no final...

Student 4: Mas é mais interessante.

Student 1: Mais interativo.

Student 5: Exato, somos nós a explorar.

Researcher: Ok, boa. E a nível de... Em casa, o que é que vocês, têm, já alguma vez viram um filme relacionado com a paleontologia? Viram alguns documentários?

Student 2 and 5: Jurassic World.

Researcher: Jurassic World, sim.

Student 1: National Geographic. Lá tem muitos documentários de paleontologia.

Researcher: E gostas de ver?

Student 1: Às vezes.

Researcher: E assim, videogames, alguns livros de paleontologia?

Student 4: Joguei um jogo com dinossauros e assim.

Researcher: Okay.

Student 6: Jurassic Park.

Student 5: É.

Student 2: Eu Jurassic Park também.

Researcher: Jurassic Park é o antigo. Depois tens o mais recente que é o World.

Student 4: Há dois ou três de Jurassic World, acho.

Student 5: São quatro.

Student 1: Também há aquela coisa na Lourinhã, não é?

Researcher: Sim, vocês nunca lá foram?

Student 1: Sim.

Researcher: E gostaste?

Student 1: Sim.

Student 3: Eu até fui com a escola.

Researcher: Foste com a escola?

Student 3: Sim, no primeiro ciclo.

Researcher: Ah, sim. Há muita gente que diz isso, que foi no primeiro ciclo com a escola.

Researcher: E, por exemplo, quando vocês vão a esses sítios, quando lêem esses livros, quando vêem os documentários, vocês acham interessante e gostavam de saber mais?

Student 1: Lá está dependendo do tema.

Student 2 and 4: Sim.

Student 1: É que, na paleontologia, há várias coisas que se falam. Alguns, sim. Outros, não.

Student 5: Também no momento. No momento é fixe e depois uns dias, mas depois para sempre começa a ficar um pouco chato.

Student 6: Sim.

Student 4: Até pode ser um tema de que estamos a falar na escola e depois até é interessante.

Student 3: Exato.

Student 4: Isso é algo mais. Há coisas mais interessantes, mas outras mais...

Researcher: Sim. Isso é em tudo, não é? Pois. Por muito que a gente goste de um tema, é como ir para a faculdade e estudar uma coisa que nós gostamos muito. Mas há cadeiras, que são as coisas mais aborrecidas desta vida, que não te interessam tanto, mas que são essenciais...

Student 1: Importantes.

Researcher: Importantes para aprender, exatamente. Então, e no vosso dia a dia? Alguma vez repararam, na paleontologia, desde coisas estampadas na roupa, fósseis no chão, nos edifícios, coisas assim?

Student 4: Eu olho para as plantas, tipo, estamos a andar, olho para as árvores. Sim.

Student 1: Isso não é um fóssil.

Student 2: Na praia, as conchas algumas.

Student 5: Sim. Na praia há muitos fósseis.

Researcher: Aqui também, na Arriba.

Student 4: Aquelas coisas presas nas rochas que há nas praias.

Researcher: Então e tu? (To student 6)

Student 6: Só nas camisolas.

Researcher: Só nas camisolas. Não tens, assim, nenhum livro em casa de paleontologia? Nenhum documentário?

Student 6: Não.

Researcher: E tu não tens? Nunca reparaste, assim, nada de paleontologia fora da escola? Assim, fósseis, não? De dinossauros, em lado nenhum? (To student 3)

Student 3: Não.

Student 1: Em Cacilhas, há alguma coisa ali que até é exposta. Acho que sim. Que até tem um vidro por cima, agora, no chão.

Student 2: Ah, sim, já me lembro.

Student 4: Sim! Também vi.

Student 5: É no passeio de Cacilhas.

Researcher: Foram com a escola, foi?

Student 4: Não. Não, fomos sozinhas.

Researcher: Foram sozinhos foi?

Student 4: Sim, não tivemos aulas, então fomos para lá.

Researcher: Ah, que fixe.

Student 2: Eu não, eu fui com a minha família, não é?

Researcher: Outra pergunta. Achar que é importante aprender a paleontologia?

Student 1, 2 and 4: Sim.

Student 5: Depende.

Student 1: Estudar o passado.

Student 2: Para ir para o futuro, temos que estudar o passado.

Student 4: Saber o que é que andou cá.

Student 1: Exato.

Student 4: Um passo para trás, dois passos para a frente.

Student 3: Tipo, se nós escolhermos um curso, assim, para estudar isso sim, mas tipo, agora nestas coisas, não tão aprofundados. Porque, senão, também não aprendemos outras matérias e outras coisas.

Student 4: Exato.

Researcher: E porquê que disseste depende? (To student 5)

Student 5: Não sei.

Researcher: Concordas com ela?

Student 5: Porque é importante saber algumas coisas, mas mais aprofundado, depois é outra área.

Student 1: Acho que ter uma noção do passado é bom, mas daí a ser mesmo aprofundado e passar todo o tempo no passado...

Student 3: É um bocadinho chato também.

Student 1: ...é aborrecido.

Student 4: Saber o básico para a vida é bom. Saber o básico é bom também.

Student 1: Sim, é como conhecimento geral.

Researcher: Exato. E vocês acham que é importante ter conhecimento geral?

Student 2 and 5: Sim

Student 1: É indispensável.

Student 2: Tipo de tudo. Acerca de tudo também.

Researcher: Ok, boa. Mais uma pergunta. Vocês têm alguém na área da ciência que vos inspira? Pode ser um professor, um membro da família, um amigo, alguém que vocês conheçam.

Student 4: Tomas Edison.

Student 1: Inspirar, inspirar...

Student 4: Não o conheço.

Researcher: Sim, sim...!

Student 4: O Edison, tipo, criou a lâmpada e a mãe da radioatividade.

Researcher: Sim. Sim, Mary. Marie Curie.

Student 2: A mim ninguém me inspira porque não gosto muito dessa área, não é a minha onda, mas...

Researcher: Não gostas assim da área das ciências?

Student 2: Não, eu não tenho notas para isso.

Researcher: Não estamos a falar de notas.

Student 1: Acho que quero ir para essa área, mas aí inspirar, acho que não é bem isso.

Researcher: Achas que não seguirias a área das ciências?

Student 2: Não.

Researcher: Nós já estávamos aqui a falar, antes de eu pôr isto a gravar, já estávamos aqui a falar um bocadinho, quem é que ia para ciências, quem é que estava interessado. Qual é a área que gostavas de seguir? (To student 1)

Student 1: Matemática e economia.

Student 5: Ah, eu gostaria de ciências, porque é o curso com mais saída para tudo. É o que exige mais, mas pronto, eu sei. Só que tem física ou química e eu sou... Física ou química A ainda por cima.

The conversation continues about several subjects in the Science and Technology course and Economy (Irrelevant to this project).

Researcher: Meninos, vou parar a gravação só porque já acabei as minhas perguntas, ok? E muito obrigada por participarem nesta sessão.

CARLOS GARGATÉ

8th CLASS | 21/03/2024 | 5 STUDENTS (4F & 1M)

Researcher: Se não se importam, vou pôr o telefone aqui no meio, porque assim consegue ouvir as nossas vozes e perceber, okay? Hoje é dia 21, não é? E vocês são do 8º ano. Okay, então...Primeira pergunta, o que é que vocês acham que é a paleontologia? O que é que surge na vossa mente quando vocês pensam em paleontologia?

Student 4: Estudo dos fósseis.

Researcher: Okay.

Student 1: Sim, basicamente isso.

Researcher: O que é que vocês acham que são fósseis?

Student 1: Para mim, são restos do corpo de animais que foram fossilizados nas rochas.

Researcher: Vocês concordam? (To all students)

Student 2, 3 and 4: Sim.

Researcher: É? Concordas? (To student 5)

Student 5: Sim.

Researcher: Bom, e o que é que vocês acham que faz um paleontólogo?

Student 4: Estuda... Estuda isso?

Student 2: Sim, estuda os fósseis.

Student 1: Estuda a história dos fósseis.

Student 2: Depende do sítio onde vives, tem mais oportunidades de ver fósseis em vida real, digamos assim, e investigar.

Researcher: E acham que é mais um trabalho assim de laboratório ou mais no campo em que se está a trabalhar?

Student 3: No campo.

Student 4: Os dois, claro.

Researcher: Os dois, ok.

Researcher to student 5: Achas que é um bocadinho dos dois?

Student 5: Sim.

Student 4: Descobre-se os fósseis em campo e depois estuda-se em laboratório, por isso penso que seja os dois. Sim.

Student 2: Eu acho que, por exemplo, se fosse em Portugal, acho que era mais no campo, tentar descobrir, porque eu acho que não há muitos fósseis em Portugal, por isso é continuar, continuar a tentar descobrir, quer dizer, só se se descobrir alguma coisa, é que vamos para o laboratório.

Researcher: Ok. Vocês algumas vezes foram ao museu com fósseis?

Student 2: Sim.

Researcher: Ou foram a um sítio com pegadas?

Student 1 and 4: Sim.

Researcher: E gostaram?

Student 5: Sim.

Researcher: E ficaram interessados em saber mais ou nem por isso?

No reply, so I tried to read the body language.

Researcher: Mais ou menos? E foram com quem? Foram com a escola, foram com a família, com amigos?

Student 4: Com a escola, com a família...

Student 2: Sim, com a escola.

Researcher: Foste com a escola também? (To student 3)

Student 3 moves her head in confirmation.

Researcher: Sim. Ok, ok. E não ficaram assim muito interessados em saber mais? Não foram para casa pesquisar mais sobre o assunto? Foi só um dia bem passado?

Student 4: Sim.

No answer from the other students.

Researcher: Okay. Ao visitar esses museus e esses fósseis, alguma vez aprenderam alguma coisa que não vos ensinaram na escola?

Student 2: Sim, mas já não me lembro...

Student 4: Quando vou a esses sítios estão a falar de uma forma mais aprofundada sobre fósseis e na escola não...

Researcher: É mais sobre aquele sítio em específico que na escola não ensinam.

Student 4: Sim.

Researcher to other students: Concordam?

Student 1 and 5: Sim.

Researcher: Okay. Vocês já alguma vez viram filmes, documentários, leram livros assim de paleontologia?

Student 4: Sim.

Student 2: Já.

Researcher: E que filmes é que vocês já viram e documentários?

Student 5: Não sei...

Researcher: Não?

Student 4: Filmes é mais o Parque Jurássico.

Student 2: Exato.

Researcher: Exatamente, é o que toda a gente diz, o Parque Jurássico.

Student 4: O meu avô adorava esses filmes, por isso se via sempre com ele. Mas documentários acho que nunca vi nenhum.

Student 1: Não.

Researcher: E livros? Não costumam ler livros relacionados com fósseis ou paleontologia?

Student 1 and 2: Não.

Researcher: Não têm assim nada em casa? Assim exposto em casa, tipo algum fóssil ou assim nada?

Student 4: Não.

The rest of the students articulated NO with their heads.

Researcher: Okay. E assim, no vosso dia-a-dia já alguma vez repararam em coisas de paleontologia? Assim, fósseis no chão, nos edifícios? Já alguma vez tiveram oportunidade de olhar em volta e ver mesmo imagens de fósseis, por exemplo, estampados numa t-shirt, algo assim do género, já alguma vez repararam?

Student 4: Às vezes.

Student 2: Sim, às vezes.

Researcher: E tipo, a onde, mais ou menos?

Student 2: Por exemplo, quando eu fui à praia, não é considerado, para mim não é considerado bem um fóssil porque é uma coisa, pronto... Mas é tipo uma concha que estava dentro de uma pedra, que pareceu um fóssil.

Researcher: Sim, sim.

Student 2: E também muita gente usa camisolas com... principalmente do Jurassic Park, com logo e assim...

Researcher to student 5: E tu já alguma vez reparaste?

Student 5: Acho que também, naquilo que eu via, mas... Mas nunca vi, assim... Mais nas t-shirts.

Researcher: Sim, t-shirts na roupa, nos pósteres também?

Student 5: Sim...

Researcher: Ok, boa. Aham que é importante aprender sobre a paleontologia?

Student 2: Conhecimento geral.

Student 4: Sim, não aprofundado, mas acho que temos que saber mais ou menos as coisas.

Student 1: Importante para a história também para sabermos o que é que esteve aqui antes de nós.

Researcher: Sim, sim, sim.

Researcher to student 3: Concordas? Não queres acrescentar mais nada?

Student 3: Não.

Researcher: Algum de vocês conhece alguém, na ciência em geral? Não precisa ser na paleontologia, mas na ciência em geral que vos inspira, como um familiar, um professor... Alguém que vocês conhecem, que vocês pensam, gostava também de seguir por ciências e tecnologias. Têm alguém?

Student 1: O meu irmão.

Researcher: O teu irmão, ok.

Student 1: Ele seguiu ciências e tecnologias, mas depois acabou por ir para informática.

Researcher: E está a gostar?

Student 1: Já está a trabalhar.

Researcher: Já? E está a gostar do trabalho?

Student 1: Sim.

Researcher: E vocês?

Student 2: Eu acho que... A minha opinião já está formada, já sei para onde é que eu vou, mas não foi por ninguém. Simplesmente porque eu gosto.

Researcher: E vocês?

Student 4: Eu gostava de ir para ciências, mas não tenho ninguém que me inspire.

Student 5: Eu gostava de ir para ciências, mas também não é por ninguém em específico, é por gosto.

Researcher: Okay meninos muito obrigada pela vossa participação. Têm alguma pergunta para me fazer? Não? Então vou desligar o microfone, porque já não é preciso e deixar-vos ir de volta para a aula.

ANSELMO DE ANDRADE

9th CLASS | 20/03/2024 | 6 STUDENTS (3M & 3F)

Researcher: Então, a minha primeira pergunta é... O que é que vocês acham que é a paleontologia? O que é que surge no vosso pensamento quando pensam em paleontologia?

Student 2: Acho que são fósseis...

Student 1: Eu penso em dinossauros.

Student 4: Eu também.

Researcher: O que é que tu pensas? (To Student 5)

Student 5: Dinossauros?

Researcher: Sim, sim, está certo.

Student 3: É igual.

Student 6: Também.

Researcher: Ok, boa. E o que é que vocês acham que são fósseis?

All students: São restos...

Researcher: Restos de quê?

All students: De animais.

Researcher: Sim, restos de animais, não é? E de plantas que viveram há muito tempo atrás. Boa.

Researcher: E o que é que vocês acham que faz um paleontólogo?

Student 1: Estuda e analisa esses fósseis.

Researcher: Boa. E, tipo, acham que é mais, a nível de laboratório? Ou ir para o campo escavar?

Student 2: Laboratório.

Student 1: Laboratório.

Student 4: Também é mais laboratório e ir para o campo escavar?

Student 5: As duas coisas.

Student 6: Sim, as duas coisas.

Researcher: Ok. E vocês também? (to student 3 and 6)

Student 3 and 6: Sim, é igual a ela.

Researcher: Vocês alguma vez foram a um museu, assim, com fósseis expostos?

Student 3: Já

Student 1: Fomos a um das pegadas dos dinossauros.

Researcher: Okay, foi a onde, lembrás-te?

Student 1: Em Leiria.

Researcher: Okay. E nunca foram assim a um museu, do género do Museu da Lourinhã ou o Dinoparque?

Student 2: Com a escola não.

Student 4: Não.

Researcher: Sim. Mas com a família, não precisa de ser com a escola.

Student 1, 2, 4 and 5: Sim.

Researcher: E gostaram?

Student 1, 2, 4 and 5: Sim.

Researcher: Acham que aprenderam alguma coisa lá que na escola não ensinam?

Student 1: Não.

Researcher: Nem por isso...

Student 2: Já não me lembro.

Student 4: Acho que sim. Obviamente, como é um museu, tem muito mais informação do que a escola.

Researcher: E vocês (To student 3 and 6).

Students 3 and 6 shake their heads.

Researcher: Okay. Deixa-me cá ver. Vocês já leram algum livro? Já viram algum comentário, algum filme relacionado com a paleontologia?

Student 3: Não.

Students 1, 2 and 4: Não

Researcher: Nunca viram Jurassic World? Ou Jurassic Park?

Student 3: Não.

Student 2: Ah, sim. Mais ou menos. Um bocadinho. Já não me lembro. Faz muito tempo.

Researcher: Então, assim, tipo, videojogos, coisas assim, com dinossauros, nunca jogaram?

Most students: Não.

Researcher: Ok. Vocês têm um filme favorito? Ou algum livro favorito relacionado com a paleontologia?

Student 4: Eu tenho, mas eu já não me lembro assim do nome.

Researcher: Ok. Vocês já repararam em algumas imagens ou fósseis, no vosso dia-a-dia, tipo, relacionado com a paleontologia? Por exemplo, tive alunos a dizerem que nas escadas da escola vêm fósseis, uma vez que a professora mostrou. Já repararam alguma coisa, assim, no vosso dia-a-dia relacionado com a paleontologia?

Student 2: Mas dentro da escola?

Researcher: Não necessariamente... no dia-a-dia, dentro, fora da escola, em casa, se vocês têm alguns fósseis postos em casa, assim.

Student 2: Não.

Student 5: Eu tenho fósseis em casa, mas tirando isso...

Student 1: Agora lembrei-me dos jogos do Animal Crossing, que tem aquela coisa dos fósseis.

Researcher: Sim?

Student 2: Ah, sim, sim, sim.

Researcher: Boa. Vocês acham que é importante aprender sobre a paleontologia?

Students 1, 2, 4 and 5: Sim.

Student 1: Porque eu acho que tem a ver com o passado, o que já se passou cá e é importante relembrar e, tipo, pesquisar, para depois conseguir saber mais coisas no futuro.

Researcher: Exatamente. E tu achas que é importante? (To student 3)

Student 3: Sim.

Researcher: Porquê?

Student 3: Para estudar o nosso passado.

Researcher: Okay. Vocês têm alguém na família, ou professores, alguém que vocês conhecem da área da Ciência que vos inspira e que vocês acham interessante e que vos faz pensar em seguir ciências?

Student 4: Sim. A minha família é da área da ciência.

Student 2: A minha irmã também é de ciências, mas... Não tenho, assim, grande interesse em seguir.

Researcher: O que é que gostavas de seguir?

Student 2: Estou mais para a arte.

Researcher: Também és mais para a arte? (To student 1)

Student 1: Não, não. Não sei. Eu gosto mais de humanidades, mas acho que não vou para a humanidades. Mas ciências, não.

Researcher: Mas é por causa da matemática?

Student 1: Nem é por isso é por causa da físico-química.

Researcher to students 5 and 6: E vocês? Têm alguém na família que...

Student 5: Sim, o meu pai.

Researcher: Tens conversas com ele lá em casa sobre ciência...

Student 5: Sim

Researcher: E achas que ficas, tipo, mais interessado quando tens conversas com ele?

Student 5: Sim.

Researcher: E gostavas de seguir...

Student 5: Sim...

Researcher: Vocês já estão no 9º ano, para o ano que vem gostavam de seguir ciências e tecnologias?

Student 4: Sim, sim.

Student 3: Eu vou para isso.

Researcher: E tu? É a mesma coisa? (To student 5)

Student 5: Não.

Researcher: Então, o que é que gostavas?

Student 5: A escola realmente não nos sabe preparar muito bem. Ainda não nos deram muitas instruções.

Student 1: Estamos um bocado perdidos, mas eu não sei. Estou entre economia e humanidades.

Student 4: Eu estou entre economia e ciências.

Researcher: Então, e tu? Tens alguém na família? (To Student 3)

Student 3: Se calhar o meu pai, mas não é bem das Ciências é mais da eletricidade e isso.

Researcher: Acho que é isso, meninos. Não tenho assim mais perguntas. Muito obrigada pela vossa participação e agora vou só desligar o gravador.

CARLOS GARGATÉ

9th CLASS | 19/03/2024 | 6 STUDENTS (3 F & 3 M)

Researcher: Ok, então, já fiz a introdução e tudo mais, já sabem qual é que é o meu tema. Primeira pergunta, o que é que vocês acham que é paleontologia? O que é que surge na mente quando pensam em paleontologia?

Student 1: Estudo dos fósseis e dinossauros.

Student 2: Dinossauros, estudos fósseis.

Student 3: Estudos fósseis.

Student 4: Fósseis.

All other students nod in confirmation.

Researcher: E o que é que acham que faz um paleontólogo? Tipo, é mais área de laboratório, tipo cientista?

Student 3: Acho que não, acho que é mais escolar.

Researcher: Ok, fixe. E tipo, trabalham no museu?

Students 1: Eu acho que há paleontólogos que trabalham nos museus, sim.

Student 4: Laboratório, eu acho.

Researcher: Sim, sim, sim. Boa. E quando pensam em paleontologia, tipo, com a vossa escola já foram a algum museu?

Student 2: Não, eu não.

Student 3: Eu sim.

Researcher: Foste com quem?

Student 3: Com o meu pai, acho que há muito tempo.

Researcher: E foste a onde, lembras-te?

Student 3: Não, era pequenino.

Researcher: E vocês já foram a algum museu?

Student 4: Sim.

Researcher: Foste a onde?

Student 4: Acho que era em Londres.

Student 5: Eu devo ter ido, mas eu não lembro.

Researcher: Eram pequeninos, não é?

Students nod in confirmation.

Researcher: Ok. E com a escola, vocês nunca foram a nenhum sítio de pegadas de dinossauros, que vocês se lembrem?

Student 6 and 2: Não.

Researcher: Foram a algum museu da ciência?

Student 1: Acho que não.

Student 3: Ah, eu fui à Lourinhã, mas isso foi com a minha família.

Researcher: Pois, não foram, assim, a nenhum sítio com a escola?

Student 2: Não, com a escola não.

Student 4: Olha a coisa que a professora fez, foi a demonstrar, tipo, nas escadas.

Student 5: Ah, pois foi. Mas foi uma aula.

Student 6: Ah, então. Acho que foi no sexto ou no sétimo, não, no sétimo. Ok, fixe.

Researcher: Então andaram, foram aqui na escola?

Student 6: Sim, sim, sim. Fomos ver nas escadas. Porque lá nos degraus dava para ver umas conchas.

Researcher: Ah, sim. E vocês acharam isso interessante?

Student 6: Sim. Ela foi mostrando pouco a pouco pelas as escadas, para vermos.

Researcher: O que é que achaste? Interessante?

Student 2: Eu? Gostei.

Researcher: Gostaste?

Student 2: Fiquei surpreso, não sabia que tinha lá fósseis.

Researcher: Há muitos sítios aqui, especialmente em Almada, em que se vê muitos fósseis, mesmo nos edifícios e no chão.

Researcher: Já viram ou leram alguma coisa relacionada com a paleontologia? Por exemplo, filmes, documentários?

Student 4: Sim. Tem um livro gigante com isso tudo.

Student 3: Eu tenho bué livros disso.

Researcher: Sim, bué livros de dinossauros e coisas assim.

Student 3: Não li muito, mas...

Researcher: E tipo filmes e documentários e videojogos?

Student 3: Jurassic Park

Student 2: Sim, eu também

Student 3: Mas acho que não é bem...

Researcher: Sim, tem a ver com paleontologia. Tem dinossauros.

Student 5: Eu também já vi uma série que um dos personagens era paleontólogo.

Student 1: Jurassic Park.

Researcher: E esses livros que vocês têm é em casa ou aqui na escola?

Student 1: Em casa, mas também deve haver aqui.

Student 5: Sim, deve haver na escola.

Researcher: E os filmes e documentários já viram aqui na escola ou é mais em casa?

Student 1: Em casa. Pelo menos eu não lembro.

Researcher: E vocês acham que aprenderam alguma coisa ao ler esses livros de paleontologia ou assistir os documentários? Acharam interessante? Tipo, ah, eu quero saber mais sobre isso.

Student 3: Eu quando era pequeno queria ser paleontólogo.

Researcher: Era...

Student 3: E até aprendi alguns nomes dos dinossauros.

Researcher: Ok, deixa ver o que eu tenho mais aqui. E a nível de livros ou de filmes há algum filme que seja o vosso favorito? Algum livro?

Student 1: Jurassic Park.

Researcher: Ok, fixe.

Researcher: E já alguma vez repararam em imagens relacionadas com a paleontologia no vosso dia-a-dia? Vocês falaram sobre aquelas escadas que a professora vos levou. E tipo, fora da escola, já repararam em alguma coisa? Alguns fósseis?

Student 3: Sim. Nas rochas da praia.

Student 2: Sim

Student 5: Exato

Student 3: Ou troncos de árvores velhas.

Student 4: Acho que eu tenho um em casa.

Student 3: Ah, também tenho uns fósseis. Veio do Canadá, foi um tio meu que trouxe.

Researcher: Ok. E vocês acham que é importante aprender sobre a paleontologia?

Student 3: Sim. Eu acho importante.

Student 1: Sim

Student 6: Sim, acho que sim.

Student 4 and 5 nod in confirmation.

Researcher: E porquê é que vocês acham que é importante?

Student 3: Sabermos o que é que reinava este mundo antes ou não.

Student 4: E é importante perceber a história.

Researcher: O que é que tu achas?

Student 5: Ah, eu concordo. Acho que devemos perceber a história. É isso aí.

Researcher: Vocês têm alguém na ciência que vos inspira? Que vocês acham que é fixe? E que gostavam de ser como eles?

Student 4: A DT.

Student 5: A professora DT?

Student 6: Sim a DT.

Researcher: O que é a professora DT?

Student 2: É a Tenente (laughing)

Student 1: Ela é super da ciência. É bióloga.

Student 3: É bióloga.

Student 4: É Professora de biologia.

Researcher: Ok, fixe. E o facto de terem essa professora faz com que vocês gostem mais de ciência.

Student 6: Eu gostei mais de ciências a partir do momento em que ela começou a dar as aulas.

Student 3: Ela trabalha de uma forma mais dinâmica.

Student 4: Mais engraçada e mais eficiente.

Student 5: Dá para perceber melhor.

Student 2: Por isso é que a DT me interessa mais.

Researcher: Ok. Eu também acho que os professores têm um impacto muito importante. Se for um professor fixe, nós até nos esforçamos.

Student 1: Mas a professora explica bem.

Researcher: Isso é muito importante. Algum de vocês quer seguir ciências no secundário?

Student 4: Não.

Student 5: Sim.

Student 3: Eu também.

Student 2: Eu estava a pensar.

Student 6: Eu vou para a informática. Para técnico de programação e sistemas.

Researcher: Isso é um curso profissional? E há aqui na escola?

Student 6: Não, aqui não há. Eu acho que há em Cacilhas.

Researcher: Ok, muito bem.

Student 2: Não sei, mas eu ia primeiro para a humanidades, mas depois vi que não ia seguir direito nem nada disso. Então, ainda estou um bocado na dúvida. Por isso ciências e tecnologia e depois, ou é com a matemática ou com as ciências...

Researcher: Vocês gostam da matemática?

Student 1: Eu gosto, mas não sou muito boa, mas gosto por acaso.

Student 2: Eu gosto.

Student 5: Eu também.

Student 4: Sim.

Researcher: E tu gostavas de seguir ciências?

Student 3: Sim, ciências e depois ver o que é que faço.

Researcher: Ok, já terminámos esta sessão, muito obrigada pela participação, espero não ter sido muito chata, e vou parar de gravar.

Student 1: De nada

Student 5: De nada

Student 4: Foi fixe e um prazer.

Annexe XI - Transcription of Irish Focus groups

COAHFORD COLLEGE

1st YEAR | 23/05/2024 | 5 STUDENTS (1 & 4 M)

Researcher: Hi everyone, my name is Andreia. I am a master's student in Palaeontology, and today, we are doing a focus group. I will be asking you some questions, and I would like you to be honest and participate. I am only trying to know what interests you in the field of earth sciences and Paleontology, not to judge your knowledge. Saying this, I'll just leave my phone here so it can better detect your voices. Okay, so the first question.

Researcher: Do you know what palaeontology is?

Student 1 and 3: No. No.

Student 2: Fossils?

Researcher: Yes, very good. And do you know what fossils are?

Student 1, 3 and 4: No.

Student 5: They're bones.

Student 2: Parts of dead creatures and stuff.

Researcher: Yeah? Okay, yes. When you say creatures do you mean animals?

Student 2: Animals, yeah, and stuff.

Researcher: And plants?

Student 2: Yeah, like organs, I suppose.

Researcher: Okay. What comes to your mind when you think about palaeontology?

Student 5: Dinosaurs.

Student 3: Jurassic park.

Student 4: Yeah.

Researcher: Okay, very good. What do you think palaeontologists do?

Student 5: Look at dinosaurs.

Researcher: They look at dinosaurs? How?

Student 5: Like, would the... With a telescope, yeah.

Student 2: With a microscope.

Researcher: So do you think it's more like a field work, like excavating dinosaurs, or more like a lab work, like looking at the fossils and dinosaurs?

Student 5: In a lab.

Student 2 and 4: Lab.

Researcher: More lab work. What do you think? (To students 1 and 3)

Student 1: Lab.

Researcher: More lab?

Student 3: Yeah, lab.

Researcher: Okay, so who do you think excavates the dinosaurs?

Student 3: That might be an archaeologist or something like that.

Researcher: Okay. So have you ever talked about fossils in school? Has any teacher mentioned it?

Student 1: No, not really.

Researcher: Um, what about, like, has anyone, like a palaeontologist, has anyone come to your school and talked about it? Have you heard friends talking about it?

Students 2, 3 and 4: No, no.

Researcher: Okay. Have you ever visited museums with fossils?

Student 1 and 4: Yeah.

Researcher: Where?

Student 4: London.

Researcher: What about you?

Student 1: London.

Researcher: Okay, very good. And how did you feel? Were you curious, like, when you looked at the fossils, or you were just like, oh, I just want to go home.

Student 4: I was looking at them like, this is interesting.

Student 1: That was a bit cool, yeah, I suppose.

Student 4: Like, the big skeletons were cool.

Researcher: Yeah. When you have seen the fossils did you think, oh, this is interesting, let's go home and find more about it, or it was just like, oh, this is cool, let's move on?

Student 1: Yeah, probably just let's move on, I suppose.

Student 4: Yeah.

Researcher: Okay. Um. And tell me one thing, when you visit this museum, did you learn something about fossils, or were you just looking at them?

Student 4: I was just kind of looking at them.

Researcher: Okay. And were there any activities that you could do in the museum, or was it just like exposing fossils, and that was it?

Student 4: There might have been, but I didn't do any.

Researcher: Okay.

Student 1: Yeah, I was just reading stuff.

Researcher: Okay. Have you ever read or watched a book or movie about palaeontology?

Students 2 and 3: No.

Researcher: No. What about Jurassic World?

All students: Oh, yeah, yeah.

Student 5: Dinosaurs, yeah. Pterodactyls and all them.

Researcher: Yeah. Um, what about books?

All students: No.

Researcher: What about documentaries? With, you know, dinosaurs and things?

All students: No.

Researcher: Okay. And when you watch those films, was more like entertaining purposes, or were you curious and you wanted to look more into it?

All students: Entertainment.

Researcher: Entertainment, so you didn't think much of it. And did you watch it at home, or?

Student 1, 2 and 5: At home.

Researcher: Okay. Now, have you ever noticed any images related to palaeontology in your day-to-day life, like on posters, t-shirts, something related to, you know, even dinosaurs? Doesn't need to be fossil in general.

Students 1, 2 and 4: Oh, yeah.

Researcher: Yeah?

Student 3: No, not really.

Student 5: What do you mean?

Researcher: Like a stamped t-shirt with Jurassic Park on it, or Jurassic World. Have you ever noticed that?

Student 5: No.

Researcher: Have you ever seen a fossil, live? Have you been in a fossil site, like where you see tracks?

All students: No.

Researcher: Like, outside school, have you ever noticed any fossils outside school?

All students: No.

Researcher: Or like in art galleries, where you see like fossils, well, maybe dinosaurs, someone painted a dinosaur.

All students: No?

Student 2: I don't go there.

Researcher: Okay. Do you think learning palaeontology is important?

Student 2: Yeah.

Researcher: Why?

Student 5: Because the dinosaurs are important to learn about.

Researcher: What do you think they're?

Student 5: They're interesting creatures.

Researcher: Okay...

Student 5: Like, you can learn about like their hands and like the way they scream.

Researcher: And why do you think it's important for us to know that?

Student 5: Because you could be helpful for people that don't know, you can tell them.

Researcher: And what do you think? Do you think it's important to know palaeontology? (To students 1, 2, 3 and 4)

Student 3: No.

Researcher: Okay. Why? You can be honest.

Student 3: I think it's a waste of time.

Researcher: Okay.

Student 1: There's no... Well, like, it's good to know about the past.

Researcher: Okay. And why do you think it's good to know about the past?

Student 1: So that like, you know what's happened, what's happened and it's like, it's interesting.

Researcher: Okay.

Student 4: As we can explain things, like, if you were, like, you know, the Earth movements and all the place and all that, you could see all that dinosaur were there, stuff like that.

Researcher: Okay. Interesting. And let's take a different approach. So do you think palaeontology is important as a science?

All students: Yeah.

Researcher: So do you think it's important to have people who know palaeontology?

All students: Yeah.

Student 5: It can always help you with your science and stuff.

Researcher: Yeah. Okay. Do you have anyone in your family, friends, teachers that would encourage you to pursue a career in science?

All students: No.

Researcher: None of you want to be a scientist or go into science?

Student 5: No, I can't even pass the test.

Researcher: What about you? (To students 1, 2, 3 and 4).

Students 1,2, 3 and 4: No.

Researcher: No? No, you don't have anyone? You don't have anyone who inspires you to be something? Do you have any idea what you want to go?

Student 1: No, not really.

Researcher: Okay, guys, I'm done with all my questions. Do you have any questions for me? No? Okay in that case I'm just going to stop recording. Thank you so much for your time and for your input.

COAHFORD COLLEGE

1st YEAR | 23/05/2024 | 5 STUDENTS (1 F & 4 M)

Researcher: Good morning everyone, my name is Andreia and I am doing this focus group in order to get some information for my thesis. I am going to ask you a few questions related to palaeontology and I will record your voices in the process.

First question, do you know what palaeontology is?

Student 2: Yes.

Student 4: Yeah.

Student 3: Yeah.

Researcher: What is it?

Student 4: Study of ancient life, isn't it? Through fossils.

Researcher: Yes. But do you have any idea what a fossil is?

Student 4: Yeah. It's the preserved remains or bones. It's the preserved bones of a creature that lived, say around the dinosaur time zone.

Researcher: Just bones?

Student 3: No, it can also be skeletons and plant materials, dead carcasses and different leaves and tree patterns, as well.

Researcher: What about footprints?

Student 2: Yes, they can also.

Researcher: What about nests?

Student 2: As in birds' nests?

Researcher: Yes.

Student 2: Yeah. Yes, because it was made of carbon, so there would be trace. Yeah.

Researcher: And eggs?

Student 2 and 4: Yes. Yes.

Researcher: Okay, and what do you think palaeontologists do?

Student 3: They research different, like... They research the different remains they find and do a lot of study on the different remains, try to figure out what period it's from, and then discuss with different scientists so that they can put together a story of what happened.

Student 2: And they probably also work with historians to kind of give an idea of what, let's say, animals would have been around there to identify what, let's say, birds' nests or what type of bird, to see if they were extinct or if they were still around at that time to show evidence if they were not extinct, let's say.

Researcher: What do you have to say? Do you agree? (To student 1 and 5).

Student 1: Yeah, I agree.

Researcher: Do you want to add anything else? (To student 5)

Student 5: No. I don't want to add.

Researcher: Okay, and do you think it's more of a, like, a field work or more like a laboratory work?

Student 4: I will say a mix of both.

All students: Yeah.

Student 4: Because to study in a lab, you need an actual specimen.

Student 2: Exactly. So I think what you... you probably be called to the field and then what you find, you bring back to the lab and you kind of...

Student 1: Study it.

Student 2: Yeah.

Researcher: Okay, very good. Have you talked about fossils in school, like, as your teacher told you about it?

All students: A bit.

Student 2: A small bit, kind of.

Student 4: Yeah, but we did quite a bit in history, yeah.

Researcher: Okay, okay.

Student 3: And a bit in history. Archaeologists.

Student 4: The work of an archaeologist, yeah.

Student 2: In, like, history where we learned about, like, bread that was in the oven of an ancient Roman... Pompeii.

Student 1 and 4: Yeah, Pompeii.

Student 3: Yeah, would that be a fossil? That they could identify as... or would that not be fossil?

Researcher: No. (Shakes her head). Now, when you were learning about these things, how did you feel?

Student 4: I found it quite interesting.

Student1: Yeah.

Researcher: Did you feel like you wanted to go home and look it up more?

All students: Yeah.

Student 2: It depends on what, let's say, it was about. But it depends if we were told more. But if I wanted to find out more, then I would.

Student 5: Yeah, you would.

Researcher: And what about going home and talk about it with your parents or your siblings?

Student 2: Not necessarily.

Researcher: Again, if you think it's interesting, you would...

Student 4: Well, it wouldn't... I just probably look over things on my own.

Student 2: But, like, a lot of our parents wouldn't have anything to do with science jobs, so we wouldn't just want to probably tell them.

Student 3: A lot of my friends like hearing about this kind of stuff, so we kind of have different discussions on science, history, geography, and all the different topics, and then usually I go home and talk about it to family members.

Student 4: It's mostly history for me.

Researcher: What about you guys? (To students 1 and 5)

Student 5: Yeah, I would talk to my... I'd tell my mum about stuff that I'm interested in and stuff like that.

Researcher: Okay, very interesting. Have you ever visited a museum with fossils?

Student 4: Yes.

Student 1: Yeah, maybe

Student 2 and 3: Yes!

Researcher: Where did you guys go?

Student 4: The British... What's National History Museum in Britain? And also just the British Museum itself.

Student 2: I went to one in Dublin and, as student 4 said, the one in London, and the one in Rome.

Researcher: Very good.

Student 3: I don't entirely know where I've been, but I've definitely seen fossils before.

Student 1: Same.

Researcher: In museums, okay, the ones who remember, seeing fossils in the museum, was there anything else in the museum that, like, for example, was there activities that you can do to learn more about it?

Student 4: Find all the dinosaur skeletons, yeah.

Student 2: There wasn't anywhere I went, personally.

Researcher: It was just fossils exposed and vegetation?

Student 2: I mean, like, you had a little plaque next to it saying...

Researcher: Would that make you more interested in it or not really?

Student 1: Probably.

Student 2: Well, I think doing, like, a thing wouldn't... Like, trying to find dinosaurs wouldn't really interest me, as if I was interested in it, then I'd read the plaque.

Student 5: Yeah.

Student 4: Yeah, I'd probably do that. I'd probably do the same, yeah.

Student 3: I feel like if that would happen, you'd get more focused on the game instead of the animals, and you'd be like, oh, I have to win. And then you'd be like, okay, a dinosaur, and then you'd run back. Well, then if you're given time to actually look at the plaques and stuff like that, you definitely retain a lot more information.

Student 5: I'd like to read the, like, description and stuff to know more about them.

Student 2: And I think if there's a visual of, let's say, what it looked like, like, let's say... Yeah. That would be a lot better.

Student 1 and 4: Yeah.

Researcher: Okay. That's called paleoart, actually. There are people who are specialists in drawing extinct animals.

Student 2: Oh, cool.

Researcher: Yeah, through their fossils.

Student 4: Interesting.

Researcher: Let's see. By visiting these museums, have you learned anything new about fossils?

Student 2: Yes.

Student 5: No.

Student 4 and 3: Yes. Yeah.

Researcher: Have you ever read or watched a movie about palaeontology? About fossils?

Student 2: Fossils, yeah.

Researcher: And palaeontology, with dinosaurs.

Student 5: Yes. I've just seen, like, fossils in them, but, like, not specifically about... Yes.

Researcher: And what was it for you?

Student 5: I think it was, like... I can't remember.

Student 2: I think it was, like, natural history or something like that. And David Attenborough did one as well.

Student 4: Oh, yeah, yeah.

Student 2: Recently, yeah.

Studenty 3: I have this book, and it's, like, about different women that changed the world. And one of them was on... I can't remember her name...

Researcher: Mary Anning.

Student 3: Yeah. And she did fossils. So that was kind of, like, my first introduction to them. But I haven't done much video or book research.

Researcher: What about you? You're saying that sometimes you watch documentaries? (To student 4)

Student 4: Yeah. I've found documentaries about fossils, but I haven't found a really interesting one yet.

Researcher: Okay.

Student 4: Because, like, I'm interested in history and geography, but fossils would probably be my biggest interest.

Researcher: And what about you? (To students 1)

Student 1: I haven't really, like, seen too much about fossils.

Researcher: What about, like, Jurassic Park and Jurassic World?

All students: Oh, yeah!

Student 4: We've all seen those, I love them.

Researcher: Those have dinosaurs in it. What about the Ice Age?

All students: Oh, yeah. The movie Ice Age.

Researcher: Ice Age movies, yeah. It has extinct animals on it.

Student 2: Yeah, yeah, yeah. I kind of like the mammoths. I think I like the concept of bringing back, let's say, you know, when they found the preserved baby mammoths. Yeah. That, you know, that they bring them back to life, let's say, through, like, an elephant, let's say. I think that's interesting.

Researcher: So you think it would be interesting to be able to clone mammoths?

Student 4 and 5: Yeah.

Student 2: Yeah, and possibly other, let's say, dinosaurs and stuff. Maybe not all types of dinosaurs. Not all. Probably only herbivores, not omnivores. Just play it safe.

Student 4: I think they should keep them, like, enclosed rather than... in the wild. Yeah, but I think it would be a cool concept.

Student 3: Yeah, do you think it would actually be possible in the future because I know there's already been cloning done? So if they actually found proper DNA, do you think it would actually be possible for the future to hold any sort of prehistoric creature?

(Conversation about cloning and bringing back extinct animals)

Researcher: Have you ever noticed any images related to palaeontology in your day-to-day life? For example, a dinosaur t-shirt, a poster in an art gallery, so, you know, someone drawing a dinosaur, or have you seen any fossils outside?

Student 4: Yeah.

Student 5: Yes.

Student 2: Well, I think, like, young kind of boys' t-shirts and stuff has, like, big dinosaurs, or there's a lot of things. And there are, I think, there's some, you know, it's like a shellfish that's gone extinct.

Researcher: The ammonites.

Student 2: Yeah, there is, like, pictures of them, like, whatever, the kind of imprint of them, in, like, four or three of my grandmother's house. It's just a nice pattern.

Student 1: Yeah, it's a nice pattern.

Student 4: I just...I used to have a really old poster when I was young, it was every single dinosaur, and it actually had explanations, diet, habitat, natural behaviour, and that was, it was a nice, yeah.

Researcher: Yeah, yeah, that's really good. What about you guys, have you ever noticed anything? (To students 1 and 3).

Student 1: I like that they make, like, films and, like, t-shirts about them, so that young people would, like, get interested in dinosaurs or fossils and stuff.

Researcher: Do you agree?

Student 3: Yeah, of course.

Researcher: Do you have anyone in your family, or a teacher, or a friend, who's interested in science, and actually, like, inspires you to go into science, or do you already have, like, an idea of what you want? She's saying yes with her head (laugh), and that's it, so we're not changing it!

Student 2: Um, well, my auntie's does food, kind of, goes into the food side of, kind of, science. Um, but she's not, like, she likes science, and, she did, she's liked biology and all that. Yeah, she qualified for biology, some kind of course in UCC, but she doesn't really talk about it.

Researcher: No, you don't.

Student 2: I don't really.

Researcher: You don't even talk about it.

Student 2: No, but I don't really, like, science would be my favourite subject, let's say.

Researcher: Why is that? It's a lot of learning, and there's a lot of... Do you feel like there's a lot to learn?

Student 2: It's very overwhelming, and, like, there's a lot of, like, you know, let's say for the animal self, hypothetically, now, you have to learn all these parts, and you're not sure where, like, what they look like, and it takes a lot of practice.

Student 1: Yeah. It's too, like, complicated, and the words are, like, too hard to learn off, and they're a bit similar, and... Yeah.

Researcher: Okay. So, science is not your favourite subject?

Student 1: No.

Student 3: Personally, I quite enjoy science. I find it very interesting, thinking about the force in physics, and black holes, and everything, and a lot of the time, me and my friends will discuss different theories that we've seen, so...

Researcher: Very good. And do you think palaeontology is important?

All students: Yes.

Researcher: Why?

Student 5: To learn about the past.

Student 1: It would, like, bring back what It would show us what the world was like back in, like, prehistoric times.

Student 2: And it would kind of give us a thing for, like, climate change. I'm not sure it's this... But is it, like, fossilised trees that you can see what the climate looked like from their rings so that we could predict, is this usual for this climate, or is it unusual? And that we could, let's say... Almost, let's say...

Researcher: Predict the future?

Student 2: Not pre... Yeah, kind of foresee what might happen, and kind of know what's going to happen, and, like... Yeah.

Student 3: Yeah. I feel like in prehistoric times, a lot of the world had a pretty symbiotic relationship, but then, since we've come in, it's definitely thrown a lot of it out of balance. So the

more we learn about the past, and how the different animals reacted with each other, and kept each other in balance, it could help us rebalance the planet now. So...

Researcher: Yes. Yeah, very good. Yeah. I like that answer.

So do you guys have any idea what you want to be?

Student 2: Yeah.

Student 1: Kind of, yeah.

Student 5: I'd like to go in college. Yeah, possibly. I want to do a trade. I want to go to MTU, and then go doing... I don't know, either, like... It wouldn't be anything about...

Researcher: Science.

Student 5: Science, yeah.

Researcher: Okay and do you have anyone at home that likes science, or not really?

Student 5: Not really, no.

Researcher: So, you guys don't have anyone that, like, inspires you?

Student 1: No.

Student 2: Well, I usually... I was usually, like... As in, scientists... Would there be many in Ireland, though? As in... You wouldn't really hear...

Researcher: What about, like, teachers, for example? Some teachers might inspire you to, you know, move a career in science? Or parents? Or friends?

Student 3: Yeah.

Researcher: Doesn't need to be necessarily someone that you don't know.

Student 2: But, like, as student 3 was saying about the black holes... Like, a lot of that is very... Like, I would prefer, let's say... To go into finance and kind of... That kind of business kind of route. Instead of, let's say, going kind of science, because it's a lot of unknowns. And, like... A lot of testing theories. But where I prefer, let's say, 4 plus 4 equalisation, there's no...

Researcher: That's it, yeah.

Student 2: And there's no arguing about that.

Researcher: Mathematics is a very exact science. While the earth sciences are not exact sciences.

Student 5: I feel like you would get a bit frustrating if you couldn't find anything. Or if you couldn't find the, like, explanation for...

Researcher: Or even more frustrating when you're nearly 100% sure it happened this way. And then a year or two years later, it comes along some other person who says, nope, this is all wrong because we found new evidence that might prove this instead

Student 3: Yeah like, I found out this. So it happened... but it actually happened that way. Like a lot of dead scientists, their theories were proven wrong and incorrect

Student 2: Yeah, yeah. So I just feel like your life's work might just be thrown out the window.

Student 4: Yeah, exactly.

Student 3: I feel like a lot of people this age want something that they can rely on for stability and stuff like that. Whereas you get older, you might get into the more creative side of different things.

Student 1: Yeah.

Researcher: What would you like to...

Student 3: I really want to do something along the lines of occupational therapy or accounting.

Researcher: Yeah. Very good. Okay, guys, do you have any questions for me? I'm all done with my questions. Thank you so much for your time, guys, it was lovely to talk to you and to have your input.

COAHFORD COLLEGE

2nd YEAR | 23/05/2024 | 5 STUDENTS (4 F & 1 M)

Researcher: So the reason why I'm recording this focus group is because it's easier for me to have it recorded so I can transcribe it and then take some data out of it, okay? Instead of me having to write it down while I'm having a conversation with you, okay? Do you know what a focus group is?

Student 1: No.

Researcher: Okay, so it's what we're doing right now. So we get together a few people and I'm just going to ask a few questions about palaeontology, your experiences and all. Again, this is not part of any test or exam. I'm not here to judge what you know. I just want you to be honest with me, okay?

All students: Yap, okay.

Researcher: Perfect. So the first question is, do you know what palaeontology is?

Student 2: Yeah.

Student 4: Yeah.

Researcher: Okay, what comes to your mind when you think about palaeontology?

Student 1: Fossils.

Researcher: Fossils?

Student 1: Yeah, like studying fossils.

Researcher: Okay, anything else?

Student 3: Extinct animals.

Student 2: Dinosaurs.

Student 4: Fossils.

Researcher: Okay, and what do you think palaeontologist do?

Student 5: Like excavate.

Researcher: Okay.

Student 2: Work in a lab.

Researcher: Works in a lab. So does it work in a lab or does it do like field work, like excavating?

Student 2: Maybe like both.

Researcher: Okay, do you agree? (To student 1, 2 and 3)

Student 1: Yeah.

Student 3: Yes.

Researcher: And when we were talking, saying about fossils, what do you think fossils are?

Student 2: The remains of extinct animals.

Researcher: Just animals?

Student 2 and 5: And plants!

Researcher: Very good. And what do you think fossils are? (To student 3)

Student 3: I agree with them.

Researcher: Okay. Have you learned about palaeontology in school? Like have you learned about fossils in school?

Student 5: No, not really.

Student 1: Dating them, like carbon 14.

Researcher: Yeah. Okay.

Student 4: And like fossil fuels.

Researcher: So you talked about fossil fuels, but have you talked about like fossils in a way of learning planet Earth History?

Student 4 and 5: No. No.

Researcher: Okay. Have you ever visited a science centre or a museum with the school?

All students: No.

Researcher: No. What about your family?

Student 1 and 4: Yeah.

Researcher: Okay. Have you seen fossils in that museum?

Student 1 and 5: Yeah.

Researcher: And where was it?

Student 1: London.

Researcher: London. You have been in London. What about you? (To student 5)

Student 5: I don't remember.

Researcher: Can't remember. Okay.

Researcher: What about you girls? (To students 2, 3 and 4)

Student 2: Uh, no.

Researcher: You've never visited?

Student 3: No.

Researcher: Okay so, for the students who did visited museums, do you remember anything about it? Do you remember seeing the fossils?

Student 5: I think it was in like a kind of glass box.

Researcher: Okay. Do you know how you felt about it? Like, did you want to learn more? Or are you just like, oh, let's continue, because this is boring.

Student 1: I was just curious.

Student 5: The same.

Researcher: Okay. While visiting those museums, did you learn anything new about palaeontology that you didn't know?

Student 5: Not really. No.

Researcher: Okay. Have you ever watched or read something related to palaeontology?

Student 1: Yeah.

Researcher: Like dinosaur films or dinosaur books.

Student 5: Oh yeah.

Student 3: Yes.

Student 4: Yeah.

Researcher: And what have you watched or read?

Students 1 and 5: Jurassic Park.

Researcher: Okay. Yes. What about you? (To student 4)

Student 4: I read like a book by Richard Darwin or something.

Researcher: What about you girls? (To students 2 and 3) Have you watched like Jurassic Park, Jurassic World?

Students 2 and 3: Yeah. Yeah.

Researcher: And have you watched Ice Age?

All students: Yeah.

Researcher: That's also a film about palaeontology. It has extinct animals on it.

Researcher: So, and when you're watching these movies, do you remember what, with whom were you watching it? Were you alone? Were you with family? Did you watch it at school?

Student 5: With my family.

Student 1: The same.

Student 4: Yeah.

Researcher: Okay, does watching those movies make you want to watch more movies or does it make you want to know more about dinosaurs or about palaeontology or not really? It's just like entertainment purposes.

Student 5: A bit of both, I guess.

Researcher: Okay. And when you say a bit of both, do you feel like a difference, like if you're watching Jurassic Park, it's just entertainment or if you're watching a documentary, it makes you want to learn more or it depends on your mood?

Student 5: Like it kind of depends on the actual kind of show.

Researcher: Okay. Do you feel if it's more educational, you want to learn more or if it's more like...

Student 5: Yeah. Yeah.

Researcher: Okay. Have you noticed any images related to palaeontology in your day-to-day life? Like have you noticed fossils in stairs? Have you noticed like Jurassic Park shirts?

Student 4: Yeah.

Researcher: Have you noticed things like that?

Students 5 and 1: Yeah. Yeah.

Researcher: Where?

Student 1: I have you seen posters.

Researcher: Where?

Student 1: Umm... in the science room.

Researcher: Okay. And what about you? (To student 5)

Student 5: Like kind of just like shirts, I guess.

Researcher: And what about you girls? (To students 2, 3 and 4)

Student 4: Maybe like t-shirts.

Researcher: Okay. T-shirts. Have you ever seen a fossil like in real life?

Student 1: Yeah.

Researcher: Okay. Apart from going to museums?

All students: No. No.

Researcher: Okay. So, you've never been into a fossil site where you see like footprints?

All students: No.

Researcher: Do you think learning about palaeontology is important?

All students: Yeah. Yeah.

Researcher: Why?

Student 5: Because it kind of helps us learn about like past animals and plants.

Researcher: Okay. Do you agree? (To students 1, 2, 3 and 4).

Students 1, 2, 3 and 4: Yeah.

Researcher: Okay. Do you have anyone who encourages you to know more about science? Like, do you have a family member or a friend who encourages you to go into a science career or something like that? Like a teacher or a family member?

Student 2: Yeah.

Researcher: And who is it?

Student 2: My dad.

Researcher: Your dad. Is he in the scientific field?

Student 2: No. He's just very interested in it.

Researcher: Okay. And is he like helping you studying science and do you talk about science with him?

Student 2: Yeah. Yeah.

Researcher: Do you think he would like you to pursue a career in science?

Student 2: Yes. Yeah.

Researcher: What about you guys? (To students 1, 3, 4 and 5)

Student 5: I have a cousin who's a botanist.

Researcher: Very good. And does that make you more interested in plants or not really?

Student 5: Not really, no.

Researcher: What about you girls? (To students 1, 3 and 4)

Students 1, 3 and 4: No.

Researcher: Okay, so I think that's it. I'm done with all my questions. Thank you so much for your time and having participated in the focus group, and I will finish the recording now.

COAHFORD COLLEGE

2nd YEAR | 23/05/2024 | 5 STUDENTS (2 F & 3 M)

Researcher: So after explaining everything about the focus groups I am just put the phone in the middle so it can hear you. So, first question. Do you know what palaeontology is?

Student 1: Studying fossils.

Researcher: Okay, what is a fossil?

Student 1: Dinosaur bones.

Researcher: Just bones?

Student 2: Tracks.

Researcher: Tracks, yes. Tracks are also fossils.

Student 3: The remains of dinosaurs.

Researcher: Just dinosaurs?

Student 4: No. All extinct life.

Researcher: Yes, so animals and plants and even some organisms like bacteria.

Researcher: And what do you think palaeontologists do? Like do you think it's more like a field work, excavating fossils? Do you think it's more like in a lab? What do you think?

Student 3: In a lab, studying.

Researcher: Okay, more in a lab. What about you? (To student 1, 2, 4 and 5)

Student 2: Yeah, in a lab.

Student 5: I think it's in a lab.

Researcher: It's mostly in the lab, is it?

Student 1: Yeah.

Researcher: Okay, then, who's going to excavate the fossils?

Student 1: The builders.

Researcher: The builders excavate them? Okay. Have you talked about palaeontology in school? Did they teach you about fossils and why they're important and the history of our planet?

All student: No. No.

Researcher: Okay. Have you learned anything about palaeontology outside school? Like when going to museums? Have you been to a museum where you saw fossils?

Student 2 and 4: Yeah. Yeah.

Researcher: Where was it?

Student 4: Dublin.

Researcher: In Dublin. Was it the Natural History Museum?

Student 4: Yeah.

Researcher: What about you? (To student 2)

Student 2: I can't remember where it was, but I just remember it.

Researcher: Okay. And how did you feel when you saw the fossils? Did you feel like, oh, this is interesting or it's like, oh, let's move on?

Student 2: Interesting.

Researcher: Okay.

Student 4: I thought it was kind of cool.

Researcher: What about you? (To students 1, 3 and 5)

Student 3: I've never been to one.

Students 1 and 5: No. No.

Researcher: Okay. When you were in the museums, have you learned something new about the fossils? I know you haven't learned much in school, but when you've seen it, did you feel like I want to learn more? Or this is something new I've never seen before. I've never learned before. I'd like to know more. Or you don't remember, really?

Student 4: I didn't really think much of it.

Student 2: Same.

Researcher: Okay. And were the fossils just exposed in the museum or did you do something like, did you excavate fossils? Were there activities in the museum that you participated in, or did you just see them?

Student 4: I just saw them.

Student 2: Yes, me too.

Researcher: Okay. Um, have you ever watched or read something about palaeontology? Like watching a movie or reading a book or watching a documentary?

Student 1 and 4: Yeah.

Researcher: Yes. What?

Student 2 and 4: Jurassic World.

Researcher: Okay. What about you? (To students 1, 3 and 5)

Student 5: Yeah, I watched that a lot.

Student 1: Yeah. Same

Student 3: No.

Researcher: You've never watched Jurassic World? No.

Researcher: What about any documentaries? Have you watched any documentaries on palaeontology?

All students: No.

Researcher: Okay. No.

Researcher: For those of you who watched Jurassic World, did you feel like you want to know more about dinosaurs or not really? It was like, it's just for entertainment purposes.

Student 1: Just for entertainment.

Student 4: Entertainment.

Student 5: It was the same.

Researcher: What about you? (To student 2)

Student 2: Entertainment.

Researcher: Yeah. Okay. You didn't think much of it?

Students 1, 2, 4 and 5: No.

Researcher: Okay. Um, have you ever noticed any images related to palaeontology in your day-to-day life? For example, have you seen posters? Have you seen, you know, even t-shirts with Jurassic Park on it? Have you seen real fossils outside museums?

Student 4: Not really.

Student 2: In the science room, like posters and stuff.

Student 3: I can't really remember.

Researcher: No. Have you been like to a gallery and you've seen like a drawing of a dinosaur, for example, or another fossil?

All students: No.

Researcher: Okay. Do you think learning about palaeontology is important?

Student 2: Um, yeah, a bit. Yeah.

Researcher: Why is that?

Student 2: Um, I don't know.

Researcher: Do you think learning about palaeontology is important? (To students 1, 3, 4 and 5)

Student 4: Um, kind of. As in like, you kind of have to know a bit about the world before we were there or something.

Researcher: Okay. What about you?

Student 5: Um, yeah. To find out more from the past.

Researcher: Okay. Yeah. What about you?

Student 3: Um, I don't know.

Researcher: Okay so... Do you think it's important that we have people who know palaeontology?

Student 2 and 4: Yeah.

Researcher: Yeah. And why is that?

Student 2: Like you said, it's important to know, um, what came before us.

Student 1: Yeah.

Researcher: Do you think there's any other reason?

Student 5: We could learn from it and move forward.

Researcher: Yeah. Okay. Do you have anyone in your family or close to you that is in the scientific field? So either is a scientist or is it related to the area?

Student 2: My mom is a food scientist.

Researcher: Cool. What about you guys?

Students 1 and 3: No. No.

Researcher: You don't have anyone that, um, kind of encourages you to pursue a career in science?

Students 4 and 5: No. No.

Researcher: A teacher, a friend? No?

Researcher to student 2: Does your mom would like you to be a scientist as well?

Student 2: I don't think she cares.

Researcher: Do you talk about her work at home?

Student 2: Small bit.

Researcher: Okay. Do you feel like, for example, in science class, when you learn something that you think it might interest her, will you be go home and talk to her about it?

Student 2: Not in science, but in business.

Researcher: Okay. Yeah. Do you think it's the same? Like if, when you learn something in class that you think it's interesting, would you go home and discuss it with your family? With your friends? Not really?

All students: No.

Researcher: Okay. Do you have anyone that inspires you to become a scientist or a palaeontologist or something of the sort.

All students: No.

Researcher: No? Okay. Um, that's it. I'm done with all my questions. Do you have any questions for me? No? Okay. I'm just going to stop recording now.



2024

ANDREIA GARCIA

WHAT FACTORS INFLUENCE YOUNG PEOPLE'S ATTITUDES
TOWARDS PALAEONTOLOGY?