

**Analysis of questionnaires
to assess the
'Motivational Learning Environment' (MoLE)
of upper secondary level students
in Ireland**

**A report by the UCC / ICASE partners for
PROFILES WP7
combining data from 2013 & 2014 studies**

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May 2015

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Executive Summary

The report presents the combined results of two earlier data sets:

- data collected from 580 students in Spring 2013 (33 classes)
- data collected from 556 students in Spring 2014 (36 classes)

The purpose of this study was to see what effect an inquiry-based taught module might have on students' **attitudes** to school science. In each study second level students (ca. 16 years of age) completed **two** questionnaires before the module was taught. Some weeks later, after the module had been taught, they completed two identical questionnaires.

The first questionnaire asked students to describe **their actual experience** of school science (the 'reality'). The second questionnaire asked them to **indicate how they thought it should be** (the 'ideal'). The reality, as they perceived it, was different from what they considered to be ideal.

After the module was completed the students' ideas of ideal science lessons had not changed significantly. However their perception of the reality had shifted significantly towards the ideal.

The responses indicated the following:

- science lessons were more enjoyable (Q. 1). The change was equivalent to **54%** of the students choosing the next option on the questionnaire towards the "more enjoyable" end of the range. ✓
- the students felt happier (Q.2) (35%) ✓
- they felt they had more time to think about questions (Q.4) (50%) ✓
- topics were perceived as more important for themselves and for society (Qs.7 & 8) ✓
- they had more opportunity to make suggestions (Q.9) (66%) ✓
- they were making more of a personal effort to understand and participate (Q.12) (41%) ✓
- they felt that the class was cooperative and making more of an effort. (Q.11) (33%) ✓

The 'before' and 'after' responses to **Questionnaire 2** showed relatively less change in the students' ideas of what science lessons should be like. This may indicate that their original responses were well considered and were confirmed by the inquiry-based module.

- They had increased perception of the importance of 'signs and symbols' in science lessons . (Q.5) (23%) ✓
- They had increased perception of the importance of the opportunity to make suggestions to the teacher. (Q.9) (19%) ✓

1 Introduction

This report outlines the findings of the **MoLE** questionnaires ('Motivational Learning Environment') that were administered by the UCC group in 2013 and 2014. The questionnaire was developed by Claus Bolte, Department of Chemistry Education, Freie Universität Berlin – Germany in 2009, under Work Package 7 (WP7: Student Gains) of the **PROFILES** project ("Professional Reflection-Oriented Focus on Inquiry-based Learning and Education through Science").

The PROFILES steering committee agreed on using one specific instrument, i.e. the "Instrument for Analysing the 'Motivational Learning Environment' (MoLE)". The partners used this instrument into to collect pre-test and post-test data.

The full questionnaires are reproduced in Appendix 2.

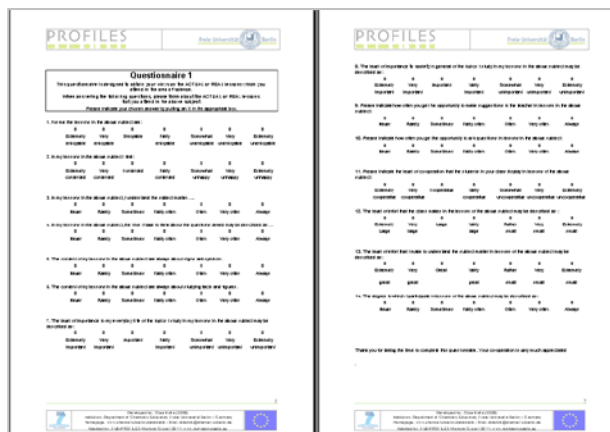


Figure 1: Layout of the questionnaires

2. Administration of the questionnaires

Sixty nine different class groups (**1134 students** in all) completed the questionnaires before and after a module was taught in accordance with the PROFILES requirements. The results were initially collected and analysed by the teachers involved. For this report all the data from individual class groups were subsequently compiled and analysed.

In the pre-test two questionnaires, each with 14 questions, were given to each student. The same questionnaires were used in the post-test.

The fourteen questions in Questionnaire 1 related to the **reality** of students' experience of science education. Each of the fourteen questions in Questionnaire 2 corresponded with those in the first questionnaire but asked the students what they thought their experience of science education **should be**.

The fourteen questions might be roughly grouped as follows:

Questions 1 & 2	Enjoyableness, sense of contentment
Questions 3 & 4	Level of difficulty of the subject
Questions 5 & 6	Presentation of the subject
Questions 7 & 8	The importance of the subject
Questions 9 & 10	Teacher approachability
Questions 11 & 12	Class involvement
Questions 13 & 14	Personal involvement

Table 1: Rough grouping of questions

3. The sample population

Of the 1134 students surveyed 31% were male and 69% were female. They were in the third, fourth and fifth years of second level education. Their ages ranged from 12 to 18. Most were sixteen years of age and nearing the end of their fourth year of second level education when the survey was completed (Transition Year).

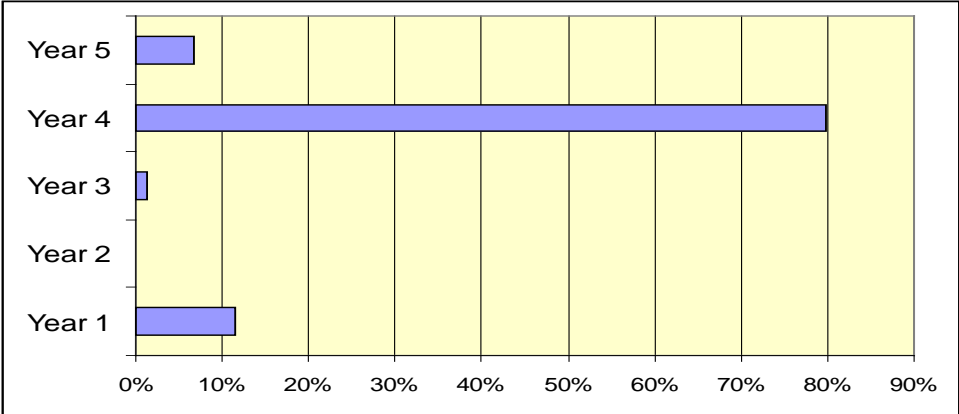


Figure 2: Year profile of the students

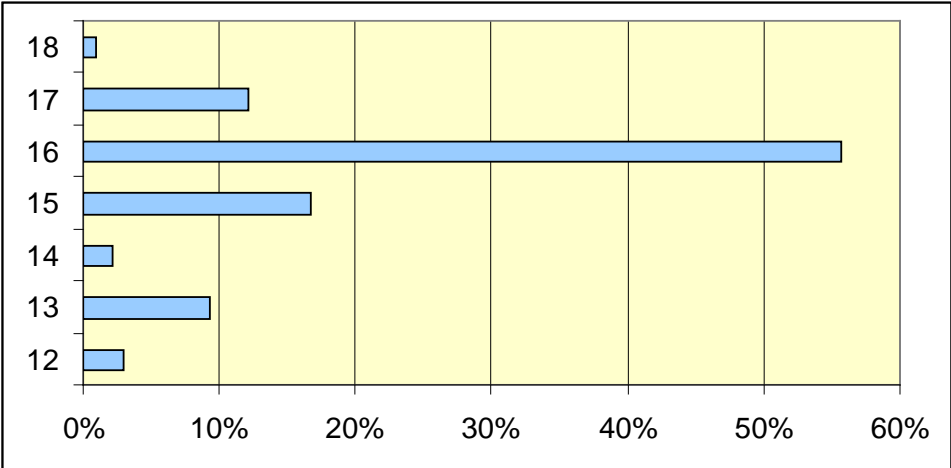


Figure 3: The age profile of the students













6. How would you rate your ability in the science subjects you are currently studying? (compared to your classmates)						
Weighting	-1	0	-1			
	High	Medium	Low	High	Medium	Low
Biology	40%	53%	6%			
Chemistry	25%	59%	16%			
Physics	22%	53%	26%			
Science	30%	61%	9%			

Figure 4: Students' assessment of their own ability in science subjects.
(An arbitrary weighting was used to represent this graphically.)

All the students in the study were in second level schools and most of them (87%) were in senior classes.

Question 8 asked students to indicate what science subjects they were studying. If some were studying more than one then they did not indicate that in their response; the total number of responses to this question was 1128.

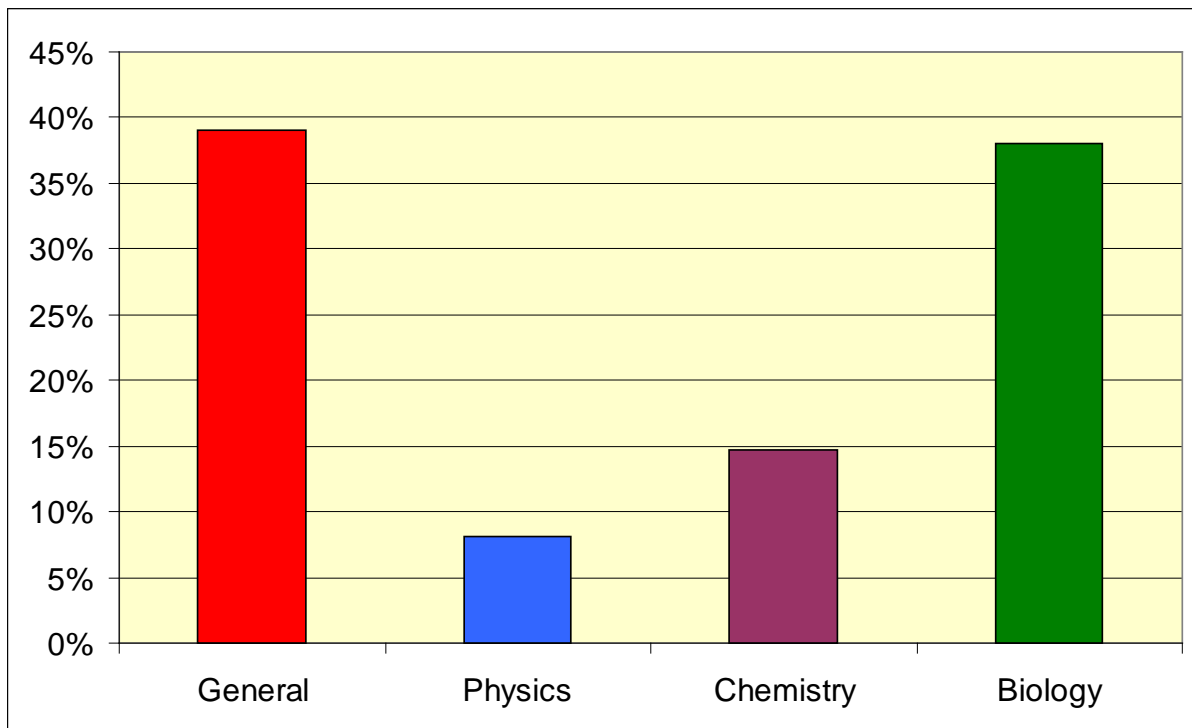


Figure 5: The percentage of students ($n= 1128$) studying various science subjects.

4. Responses to the questionnaire 1

The frequencies of responses to all the items in the questionnaires are given in Appendix 1. Some of the more significant findings are presented in this section.

4.1 Questions 1 Enjoyableness of science lessons

The students' actual enjoyment of science lessons shows an improvement in the post-test questionnaires with higher percentages selecting 'more enjoyable' options.















Options	1	2	3	4	5	6	7
1. For me the lessons in the above subject are:	Extremely enjoyable	Very enjoyable	Enjoyable	Fairly enjoyable	Somewhat unenjoyable	Very unenjoyable	Extremely unenjoyable
Before <i>n = 1134</i>							
	5%	13%	29%	35%	11%	2%	3%
After <i>n = 1134</i>							
	12%	25%	31%	22%	7%	1%	2%

Table 2: Summary of responses to question 1 in Questionnaire 1. ('Before' and 'After')

4.2 Questions 1: Estimates of Change

By using a simple weighting (e.g. 1, 2, 3, 4, 5, 6, 7) to the 'Before' and 'After' percentages (for question 1) we can estimate the amount of change that occurred (see Table 3). In this case the change is **equivalent to 54% of the students selecting the next lowest option** (which for this question means moving towards the more 'Enjoyable' end of the spectrum).

Note: Using a weighting of -3, -2, -1, 0, 1, 2, 3 would produce the same estimate of change.

Options	1	2	3	4	5	6	7
Before	5%	13%	29%	35%	11%	2%	3%
After	12%	25%	31%	22%	7%	1%	2%

Sum	
352%	Change
298%	-54%

Table 3: Estimating the change in responses to question 1 in Questionnaire 1.

In what follows, this process will be used to estimate the extent of the changes that occurred in the responses to all the questions.

4.3 Summary of all responses to Questionnaire 1 (Before and After)

The size of the 'estimate of change' shown in the last column of Table 4 indicates the extent to which students' responses had changed. **Negative values** indicate swings towards the left side of the range of options and **positive values** indicate swings towards the right.

1. For me the lessons in the above subject are:	Very enjoyable		Very unenjoyable	-54%
2. In my lessons in the above subject I feel:	Very contented		Very unhappy	-35%
3. In my lessons in the above subject, I understand the subject matter.....	Rarely		Very often	17%
4. In my lessons in the above subject, the time I have to think about the questions asked may be described as...	Rarely		Very often	50%
5. The content of my lessons in the above subject are always about signs and symbols.	Rarely		Very often	18%
6. The content of my lessons in the above subject are always about studying facts and figures.	Rarely		Very often	-6%
7. The level of importance to my everyday life of the topics I study in my lessons in the above subject may be described as:	Very important		Very unimportant	-50%
8. The level of importance to society in general of the topics I study in my lessons in the above subject may be described as:	Very important		Very unimportant	-35%
9. Please indicate how often you get the opportunity to make suggestions to the teacher in lessons in the above subject:	Rarely		Very often	66%
10. Please indicate how often you get the opportunity to ask questions in lessons in the above subject:	Rarely		Very often	2%
11. Please indicate the level of co-operation that the students in your class display in lessons of the above subject:	Very cooperative		Very uncooperative	-33%
12. The level of effort that the class makes in the lessons of the above subject may be described as :	Very large		Very small	-41%
13. The level of effort that I make to understand the subject matter in lessons of the above subject may be described as:	Very great		Very small	-21%
14. The degree to which I participate in lessons of the above subject may be described as:	Rarely		Very often	26%

Table 4: Summary of responses to all questions in Questionnaire 1. The 'estimate of change', shown as a percentage and a bar, indicates the extent of the difference between the 'Before' and 'After' responses. (For clarity, only two of the seven options are displayed.)

The responses to **questions 6 and 10** did not show much change. The responses to **questions 1 and 7** show changes equivalent to between 54% and 50% of students selecting the next 'lowest' option (i.e. towards the left side of the range of options. These are desirable outcomes.

The responses to **questions 4 and 9** show changes equivalent to between 50% and 66% of students selecting the next 'highest' option (i.e. towards the right side of the range of options). These are also desirable outcomes.

5. Responses to questionnaire 2 (Before and After)

Questionnaire 2 addressed the same fourteen areas as Questionnaire 1 but asked students what how things ‘should be’ rather than how they were in reality. It was administered before and after an inquiry-based module was taught. The extent of the change in the students’ opinions is was estimated as described earlier (in and is summarised in Table 5.

1. For me, lessons in the above subject should be enjoyable.	Very enjoyable		Very unenjoyable	1%
2. For me, I should feel contented in my lessons in the above subject.	Very contented		Very unhappy	-9%
3. For me, in lessons of the above subject, I should understand the subject matter.	Rarely		Very often	6%
4. For me, in lessons of the above subject, I should have time to think about the questions.	Rarely		Very often	-6%
5. For me, lessons of the above subject should be about signs and symbols.	Rarely		Very often	-23%
6. For me, lessons of the above subject should be about studying facts and figures.	Rarely		Very often	-10%
7. For me, lessons of the above subject should be useful in my everyday life.	Very important		Very unimportant	-15%
8. For me, lessons of the above subject should be relevant to society in general.	Very important		Very unimportant	-13%
9. For me, in lessons of the above subject I should get the opportunity to make suggestions to the teacher	Rarely		Very often	-19%
10 For me, in lessons of the above subject I should get the opportunity to ask questions.	Rarely		Very often	-10%
11. For me, in lessons of the above subject I would enjoy it when the level of co-operation of the class could be described as.....	Very cooperative		Very uncooperative	-2%
12. For me, in lessons of the above subject I would enjoy it when the level of effort that the class makes could be described as...	Very large		Very small	-9%
13. In lessons of the above subject, the level of effort that I would make to understand the subject matter could be described as:	Very great		Very small	-10%
14. In lessons of the above subject, the degree to which I would participate could be described as:	Rarely		Very often	8%

Table 5: Summary of responses to Questionnaire 2. The ‘estimate of change’, shown as a percentage and a bar, indicates the extent of the difference between the ‘Before’ and ‘After’ responses. (For clarity, only two of the seven options are displayed.)

It is clear that in most cases there was comparatively little change in students’ opinions of ideal science lessons after the module had been taught.

6. Conclusions

There was a clear difference between the students' experience of science lessons before and after the inquiry-based module was taught. Questionnaire 1 (pre- and post-test) indicated the following:

- science lessons were more enjoyable (Q. 1). The change was equivalent to **54%** of the students choosing the next option on the questionnaire towards the "more enjoyable" end of the range. ✓
- the students felt happier (Q.2) (35%) ✓
- they felt they had more time to think about questions (Q.4) (50%) ✓
- topics were perceived as more important for themselves and for society (Qs.7 & 8) ✓
- they had more opportunity to make suggestions (Q.9) (66%) ✓
- they were making more of a personal effort to understand and participate (Q.12) (41%) ✓
- they felt that the class was cooperative and making more of an effort. (Q.11) (33%) ✓

The 'before' and 'after' responses to **Questionnaire 2** showed relatively less change in the students' ideas of what science lessons should be like. This may indicate that their original responses were well considered and were confirmed by the inquiry-based module.

- They had increased perception of the importance of 'signs and symbols' in science lessons . (Q.5) (23%) ✓
- They had increased perception of the importance of the opportunity to make suggestions to the teacher. (Q.9) (19%) ✓

Appendix 1: Tabulated totals

Question	Options						No. of response to the options							n
	1	2	3	4	5	6	1	2	3	4	5	6	7	
1. Please write down the name of the class in which you are a student in your school.	text													
2. Please write down your class level (First year, second year, Transition year, etc)	1st	2nd	3rd	4 TY	5th	6th	131	1	15	905	76	1	1	1130
3. What is your date of birth?	dob													1132
4. Are you male or female?	male	female					349 = 31%	776 = 69%	11 unstated				1134	
5. Please write down the first letter of the name of the street in which you live and the house number, e.g. B/54 or L/25	text													
6. How would you rate your ability in the science subjects you are currently studying? (High, Average or low compared to your classmates)														
Biology	High	Medium	Low				386	513	60					959
Chemistry	High	Medium	Low				204	492	133					829
Physics	High	Medium	Low				176	422	205					803
Science	High	Medium	Low				271	543	82					896
7. Please indicate the type of school that you are attending.	Primary	Jun. sec.	Sen. sec.				0	162	974					1136
8. Please indicate the type of science course that you are studying:	General	Physics	Chemistry	Biology			441	92	166	429				1128

Totals (Questionnaire 1, pre-test)

Questionnaire 1 (Before)	Options							n
	1	2	3	4	5	6	7	
1. For me the lessons in the above subject are:	62	152	331	402	129	28	30	1134
2. In my lessons in the above subject I feel:	44	169	422	392	73	19	15	1134
3. In my lessons in the above subject, I understand the subject matter.....	9	47	197	159	318	319	85	1134
4. In my lessons in the above subject, the time I have to think about the questions asked may be described as...	36	70	361	248	254	117	46	1132
5. The content of my lessons in the above subject are always about signs and symbols.	47	276	478	176	114	34	6	1131
6. The content of my lessons in the above subject are always about studying facts and figures.	27	133	376	211	217	137	31	1132
7. The level of importance to my everyday life of the topics I study in my lessons in the above subject may be described as:	61	152	296	319	204	67	35	1134
8. The level of importance to society in general of the topics I study in my lessons in the above subject may be described as:	97	189	290	330	140	55	32	1133
9. Please indicate how often you get the opportunity to make suggestions to the teacher in lessons in the above subject:	72	202	263	160	197	133	105	1132
10. Please indicate how often you get the opportunity to ask questions in lessons in the above subject:	21	56	136	137	224	255	305	1134
11. Please indicate the level of co-operation that the students in your class display in lessons of the above subject:	69	209	366	300	121	46	22	1133
12. The level of effort that the class makes in the lessons of the above subject may be described as :	54	148	339	436	83	27	44	1131
13. The level of effort that I make to understand the subject matter in lessons of the above subject may be described as:	114	255	308	334	89	16	17	1133
14. The degree to which I participate in lessons of the above subject may be described as:	14	30	155	191	255	277	209	1131

Totals (Questionnaire 2, pre-test)

Questionnaire 2 (Before)	Options							n
	1	2	3	4	5	6	7	
1. For me, lessons in the above subject should be enjoyable.	366	372	238	115	20	14	8	1133
2. For me, I should feel contented in my lessons in the above subject.	296	369	292	133	23	11	8	1132
3. For me, in lessons of the above subject, I should understand the subject matter.	494	328	164	87	15	25	20	1133
4. For me, in lessons of the above subject, I should have time to think about the questions.	202	319	368	178	31	31	4	1133
5. For me, lessons of the above subject should be about signs and symbols.	43	58	203	401	295	86	46	1132
6. For me, lessons of the above subject should be about studying facts and figures.	49	124	247	431	187	66	29	1133
7. For me, lessons of the above subject should be useful in my everyday life.	234	279	327	182	72	26	12	1132
8. For me, lessons of the above subject should be relevant to society in general.	211	245	354	198	86	24	14	1132
9. For me, in lessons of the above subject I should get the opportunity to make suggestions to the teacher	180	280	373	193	66	20	20	1132
10. For me, in lessons of the above subject I should get the opportunity to ask questions.	352	327	254	121	36	22	19	1131
11. For me, in lessons of the above subject I would enjoy it when the level of co-operation of the class could be described as.....	230	453	326	92	16	8	7	1132
12. For me, in lessons of the above subject I would enjoy it when the level of effort that the class makes could be described as...	199	358	368	169	19	10	8	1131
13. In lessons of the above subject, the level of effort that I would make to understand the subject matter could be described as:	238	337	281	200	58	10	6	1130
14. In lessons of the above subject, the degree to which I would participate could be described as:	16	37	105	145	207	311	310	1131

Totals (Questionnaire 1, post-test)

Questionnaire 1 (After)	Options							n
	1	2	3	4	5	6	7	
1. For me the lessons in the above subject are:	134	285	354	245	81	14	19	1132
2. In my lessons in the above subject I feel:	78	294	415	267	58	12	8	1132
3. In my lessons in the above subject, I understand the subject matter.....	11	38	162	175	267	353	126	1132
4. In my lessons in the above subject, the time I have to think about the questions asked may be described as...	12	61	221	254	300	193	91	1132
5. The content of my lessons in the above subject are always about signs and symbols.	58	252	417	172	156	56	19	1130
6. The content of my lessons in the above subject are always about studying facts and figures.	33	111	419	215	205	115	32	1130
7. The level of importance to my everyday life of the topics I study in my lessons in the above subject may be described as:	133	253	305	226	147	42	25	1131
8. The level of importance to society in general of the topics I study in my lessons in the above subject may be described as:	151	238	340	228	113	36	26	1132
9. Please indicate how often you get the opportunity to make suggestions to the teacher in lessons in the above subject:	41	90	199	190	241	215	156	1132
10. Please indicate how often you get the opportunity to ask questions in lessons in the above subject:	16	58	126	129	249	260	291	1129
11. Please indicate the level of co-operation that the students in your class display in lessons of the above subject:	132	247	382	248	72	35	16	1132
12. The level of effort that the class makes in the lessons of the above subject may be described as :	101	230	379	324	65	15	18	1132
13. The level of effort that I make to understand the subject matter in lessons of the above subject may be described as:	126	303	350	266	64	11	10	1130
14. The degree to which I participate in lessons of the above subject may be described as:	11	32	109	169	230	289	290	1130

Totals (Questionnaire 2, post-test)

Questionnaire 2 (After)	Options							n
	1	2	3	4	5	6	7	
1. For me, lessons in the above subject should be enjoyable.	134	285	354	245	81	14	19	1132
2. For me, I should feel contented in my lessons in the above subject.	78	294	415	267	58	12	8	1132
3. For me, in lessons of the above subject, I should understand the subject matter.	11	38	162	175	267	353	126	1132
4. For me, in lessons of the above subject, I should have time to think about the questions.	12	61	221	254	300	193	91	1132
5. For me, lessons of the above subject should be about signs and symbols.	58	252	417	172	156	56	19	1130
6. For me, lessons of the above subject should be about studying facts and figures.	33	111	419	215	205	115	32	1130
7. For me, lessons of the above subject should be useful in my everyday life.	133	253	305	226	147	42	25	1131
8. For me, lessons of the above subject should be relevant to society in general.	151	238	340	228	113	36	26	1132
9. For me, in lessons of the above subject I should get the opportunity to make suggestions to the teacher	41	90	199	190	241	215	156	1132
10 For me, in lessons of the above subject I should get the opportunity to ask questions.	16	58	126	129	249	260	291	1129
11. For me, in lessons of the above subject I would enjoy it when the level of co-operation of the class could be described as.....	132	247	382	248	72	35	16	1132
12. For me, in lessons of the above subject I would enjoy it when the level of effort that the class makes could be described as...	101	230	379	324	65	15	18	1132
13. In lessons of the above subject, the level of effort that I would make to understand the subject matter could be described as:	126	303	350	266	64	11	10	1130
14. In lessons of the above subject, the degree to which I would participate could be described as:	11	32	109	169	230	289	290	1130

Appendix 2: The questionnaires

Dear students,

Are science lessons interesting? We would like to find out what science lessons should be like according to your opinion.

On the following sheets you will find two questionnaires. Please remember that there are no right or wrong answers to the questions asked in the questionnaires. We are interested in your personal opinion!

In addition to the two questionnaires, on the first page we ask for some background information about yourself. All information you provide will be kept confidential and will only be used for research purposes.

Thank you very much for your cooperation and your help!

1. Please write down the name of the class in which you are a student in your school.	_____
2. Please write down your class level (First year, second year, Transition year, etc.)	
3. What is your date of birth?	
4. Are you male or female?	† female † male
5. What is your nationality?	†
6. Please write down the first letter of the name of the street in which you live and the house number, e.g. B/54 or L/25	
7. How would you rate your ability in the science subjects you are currently studying? (High, Average or low compared to your classmates)	Biology _____ Chemistry _____ Physics _____ Science _____ (ignore those which do not apply)

Please indicate the type of school that you are attending.

- Junior School (Primary)
 Middle School (Junior second level)
 High School (Upper second level)

Please indicate the type of science course that you are studying:

- General Science*
 Physics
 Chemistry
 Biology

*This included any type of general science course (integrated, co-ordinated, etc.).

Questionnaire 1

This questionnaire is designed to obtain your views on the **ACTUAL** or **REAL** lessons which you attend in the area of science.

When answering the following questions, please think about the **ACTUAL** or **REAL** lessons that you attend in the above subject.

Please indicate your chosen answer by putting an **X** in the appropriate box.

1. For me the lessons in the above subject are:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely enjoyable	Very enjoyable	Enjoyable	Fairly enjoyable	Somewhat unenjoyable	Very unenjoyable	Extremely unenjoyable

2. In my lessons in the above subject I feel:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely contented	Very contented	Contented	Fairly contented	Somewhat unhappy	Very unhappy	Extremely unhappy

3. In my lessons in the above subject, I understand the subject matter.....

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly often	Often	Very often	Always

4. In my lessons in the above subject, the time I have to think about the questions asked may be described as...

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly often	Often	Very often	Always

5. The content of my lessons in the above subject are always about signs and symbols.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly often	Often	Very often	Always

6. The content of my lessons in the above subject are always about studying facts and figures.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly often	Often	Very often	Always

7. The level of importance to **my everyday life** of the topics I study in my lessons in the above subject may be described as:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant



8. The level of importance **to society** in general of the topics I study in my lessons in the above subject may be described as:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant

9. Please indicate how often you get the opportunity to make suggestions to the teacher in lessons in the above subject:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly often	Often	Very often	Always

10. Please indicate how often you get the opportunity to ask questions in lessons in the above subject:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly often	Often	Very often	Always

11. Please indicate the level of co-operation that the students in your class display in lessons of the above subject:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely cooperative	Very cooperative	Cooperative	Fairly cooperative	Somewhat uncooperative	Very uncooperative	Extremely uncooperative

12. The level of effort that the class makes in the lessons of the above subject may be described as :

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely Large	Very large	Large	Fairly large	Rather small	Very small	Extremely small

13. The level of effort that I make to understand the subject matter in lessons of the above subject may be described as:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely great	Very great	Great great	Fairly small	Rather small	Very small	Extremely small

14. The degree to which I participate in lessons of the above subject may be described as:

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Never	Rarely	Sometimes	Fairly often	Often	Very often	Always

Thank you for taking the time to complete this questionnaire. Your co-operation is very much appreciated

Questionnaire 2

This questionnaire is designed to obtain your views on the IDEAL lessons which you would like to attend in the area of science, i.e. what you think lessons SHOULD be like.

When answering the following questions, please think about the IDEAL lessons that you would like to attend in the above subject, i.e. what you think the lessons should be like.

Please indicate your chosen answer by putting an X in the appropriate box.

1. For me, lessons in the above subject should be enjoyable.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant

2. For me, I should feel contented in my lessons in the above subject.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant

3. For me, in lessons of the above subject, I should understand the subject matter.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant

4. For me, in lessons of the above subject, I should have time to think about the questions.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant

5. For me, lessons of the above subject should be about signs and symbols.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant

6. For me, lessons of the above subject should be about studying facts and figures.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant

7. For me, lessons of the above subject should be useful in **my everyday life**.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Extremely important	Very important	Important	Fairly important	Somewhat unimportant	Very unimportant	Extremely unimportant



8. For me, lessons of the above subject should be relevant to **society** in general.

Extremely important
 Very important
 Important
 Fairly important
 Somewhat unimportant
 Very unimportant
 Extremely unimportant

9. For me, in lessons of the above subject I should get the opportunity to make suggestions to the teacher

Extremely important
 Very important
 Important
 Fairly important
 Somewhat unimportant
 Very unimportant
 Extremely unimportant

10. For me, in lessons of the above subject I should get the opportunity to ask questions.

Extremely important
 Very important
 Important
 Fairly important
 Somewhat unimportant
 Very unimportant
 Extremely unimportant

11. For me, in lessons of the above subject I would enjoy it when the level of co-operation of the class could be described as.....

Extremely cooperative
 Very cooperative
 Cooperative
 Fairly cooperative
 Somewhat uncooperative
 Very uncooperative
 Extremely uncooperative

12. For me, in lessons of the above subject I would enjoy it when the level of effort that the class makes could be described as...

Extremely Large
 Very large
 Large
 Fairly large
 Rather small
 Very small
 Extremely small

13. In lessons of the above subject, the level of effort that I would make to understand the subject matter could be described as:

Extremely Large
 Very large
 Large
 Fairly large
 Rather small
 Very small
 Extremely small

14. In lessons of the above subject, the degree to which I would participate could be described as:

Never
 Rarely
 Sometimes
 Fairly often
 Often
 Very often
 Always

Thank you for taking the time to complete this questionnaire. Your co-operation is very much appreciated.