

UNIVERSITY OF
NEWCASTLE UPON TYNE



Does Peer Assessment Improve Pupil Performance?



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PROJECT AIMS & PROGRESSION FROM YEAR ONE

To investigate whether developing Reflection, Resourcefulness and Resilience in Year 7 pupils through peer assessment raises overall standards and improves individual achievement. This is:

- to see if there is a difference in the quality of work produced by one class before and after a peer assessment exercise;
- to compare the work produced by two classes to see if the peer assessment exercise produced higher quality homework.

RESEARCH FOCUS

The research will aim to understand the relative importance of different Learning to Learn approaches in raising standards; whether, and if so how these approaches support the development of confident and capable lifelong learners. The research will consider the role of assessment in developing Learning to Learn and how it can best be assessed.

DIMENSIONS OF THIS CASE STUDY

This was a pilot study, which used only a limited sample of students. The intention was to provide some initial feedback on the effects of the Learning to Learn techniques used, with a view to conducting further research, using a much more statistically valid sample of students. Nevertheless, the results produced are still extremely useful.

Focus in the 5Rs for
Lifelong Learning:

Resilience	<input checked="" type="checkbox"/>
Remembering	<input type="checkbox"/>
Resourcefulness	<input checked="" type="checkbox"/>
Reflectiveness	<input checked="" type="checkbox"/>
Readiness	<input type="checkbox"/>

SUMMARY OF FINDINGS

- Peer assessment using a mark grid is definitely of benefit in terms of improving the overall quality of work produced by students.
- There is a definite improvement in the quality of work produced by a class after experiencing a peer assessment exercise. The class who experienced the peer assessment exercise produced higher quality homework than the control group.
- Next time, I would think about pairing students of similar abilities to do the peer assessment.
- I am going to develop the project over the next year to encompass the whole year group, to give a much more statistically valid sample. I also want to investigate the impact on individual students, to see if different abilities benefit more from peer assessment exercises.

YEAR ONE RESEARCH

Summary of Year One Findings

During Year One the school established a cross-curricular group of lead learners from each department who were trained in the use of co-operative learning structures and who evaluated their impact in the classroom with Year 7. The model of having a working party, with representatives from each department, engaged in action research proved successful and so was adopted for the formation of the parallel Assessment for Learning (AfL) group. The group meets every half term for training and to share ideas and experiences.

Within the school there is a strong focus on teaching and learning. Many ideas are shared across the staff via a monthly teaching for learning bulletin, through staff-led workshops on INSET days, through market-place activities at staff meetings and through engagement in action research focused on either co-operative learning or assessment for learning.

I am relatively new to the Campaign for Learning project, but the work that I have been doing on AfL links in strongly with the school's Year One research on co-operative learning and its aim of developing independent, lifelong learners.

Moving Forward

This research project takes forward the school's Year 1 research on co-operative learning structures by focussing on the development of peer assessment as a teaching and learning strategy.

CONTEXT

School Background

Fallibroome High School is a successful, oversubscribed, mixed comprehensive

school situated in Macclesfield, Cheshire. It has 1490 students, including 292 in the sixth form, 3.7% Special Educational Needs (SEN), 2% Free School Meals (FSM) and very few pupils with English as an Additional Language (EAL). Attainment on entry to the school is above average and this is maintained or improved, with very strong results at Key Stage 3, Key Stage 4 and Key Stage 5, which is reflected in sustained A or A* scores in the PANDA reports. The intake of the school reflects a wide socio-economic spectrum and most parents are pleased with the school because of its high expectations and high attainment.

Fallibroome became involved in the Campaign for Learning Phase 3 Research Project following participation in Cheshire's Inclusive Education Group. This had proved very successful therefore, many of the schools involved were keen to continue the work and applied to join the Campaign for Learning, which offered an ideal opportunity for sustained development, supported by a strong research team. Fallibroome is also part of a Networked Learning Community (NLC) with its five main feeder primary schools and has a secondary Leading Edge Partnership with the other secondary schools in the town. This has allowed it to secure funding streams with which to support extensive staff INSET.

Three cohorts of staff have now been across to the Learning Brain Expo in the US, which gathers together a wide variety of experts in mind-friendly learning. In a further development, staff from each of the schools in the network have also been sent to the five day intensive co-operative learning course, run by Kagan in Florida and two primary colleagues have been seconded to act as consultants in co-operative structures, offering training in schools across the town. The Head teacher is keen to have a secure research base for developments in the school and

has found Charles Desforges' paper, On Learning and Teaching, particularly relevant. In it, four major lost learning opportunities are discussed:

- transitions;
- assessment;
- knowledge application;
- classroom work.

The school is seeking to address each of these areas as it develops its strategic policy for the future. The first, transitions, is being addressed via collaboration especially within its NLC, with staff in each phase being trained to use the co-operative structures, so that the children's experience of lessons remains consistent across the transition.

Knowledge application and classroom work are being addressed by a sustained whole school focus on investigating effective teaching and learning strategies. In Year One, the trial of co-operative learning strategies proved to be very worthwhile and this approach is now being used to support thinking skills strategies using the Secondary Strategy materials for Leading in Learning to supplement the co-operative structures.

The final one, assessment, brings in the assessment for learning agenda. A working party has investigated various techniques over the year and, from 2005-06, changes will be made to Year 7 Programmes of Study and the school's reporting policy to ensure more consistent use of AfL principles. In Year Three, the school intends to report on the impact of these changes. This report describes the findings of an action research project in geography, which has contributed to the development of school policy in relation to AfL.

Personnel Involved in the Research Teacher(s)

I am first and foremost a teacher of geography from Years 7-13 and came to AfL through my work as departmental representative on the school's AfL Group. The group was set up about twelve months ago and I had volunteered to represent the department, since I was interested in finding out more about AfL. In addition, I wanted an opportunity to assist with my progression on the Upper Pay Scale, since one of the expectations of the school is that staff on the Upper Pay Scale involve themselves in activities of whole school benefit. I am also a member of the AfL Cheshire Geography Working Group, set up this academic year by the Geography Advisor for Cheshire, to help create resources for use by teachers across the county. Before arriving at Fallibroome, I was a teacher of A-level Geography and A-Level Geology for nine years at Hereford Sixth Form College.

Pupils

Two classes of children were involved in the study. Form 7O, a mixed ability class of 30 students, (five of whom are on the school SEN register), trialled the peer assessment lesson. Form 7E, a mixed ability class of 30 students, (eight of whom are on the school SEN register), acted as a control.

They were chosen for this research firstly because they are both taught by myself, receiving one hour of geography teaching per week. Secondly, both classes were used to peer and self assessment activities, as I have been trialling AfL strategies with them since the start of the academic year, in my role as a member of the school AfL Group. I had chosen this year group for the trial, since I felt that they would be more receptive to AfL ideas and would have no preconceptions about the other members of their form or how they should behave in class. In addition, they have experienced L2L in other subject

areas, from staff involvement in Campaign for Learning, which focuses on co-operative learning structures. The majority of students will have also experienced co-operative learning in their primary schools, as a result of the school's Network Learning Community. In October, soon after joining the school, Year 7 students experienced a L2L day, which introduced them to the different learning styles and how the brain works. Towards the end of Year 7, they have also used the Tracking Learning Online website, developed by Professor Guy Claxton, to give them their learning disposition profile.

PROJECT OBJECTIVES

Developing the Rationale

This aspect of L2L was chosen since I was involved in a project for the AfL Cheshire Geography Working Group, looking at the extent to which peer assessment improved achievement, as well as generating resources for other teachers to use across the county.

Objectives

To investigate the degree to which developing reflection resourcefulness and resilience skills through a peer assessment exercise improves the quality of work produced. Through this classroom research project I aim to:

- see if there is a difference in the quality of work produced by one class before and after a peer assessment exercise; and
- compare the work produced by two classes to see if the peer assessment exercise produced higher quality homework.

Hypothesis

Developing reflection, resourcefulness and resilience in Year 7 pupils through peer

assessment raises overall standards and improves individual achievement.

RESEARCH PROCESS

Teachers' Choices

A homework activity was devised as part of a Year 7 unit on Volcanoes and Earthquakes. This area of the geography scheme of work was chosen because I am currently trialling AfL strategies with my Year 7 classes, as part of my role as a member of the school's AfL Group. I chose this particular activity, since I wanted to adapt an existing piece of work to incorporate AfL/L2L strategies, rather than 'reinvent the wheel'.

Homework 1: The two classes were set the task to prepare a rough draft of a news report on an earthquake of their choice. They were both given the same task sheet, see Appendix 1. This included a section on 'Hints for Success' based on the mark scheme, which gave them more detailed information about what to include to achieve a high quality piece of work.

Lesson 1: One class, 70, having taken part in a quick starter activity of geographical hangman, undertook a peer assessment exercise with their shoulder partners during the first half of the lesson, (see Appendix 2 for the relevant handouts). I explained the nature of the activity to the whole class, before going around the room giving help/advice where necessary once they were underway. The activity involved them in reading their shoulder partner's rough draft and ticking on a mark grid where they felt their partner had achieved in each of five areas. They then filled in an evaluation sheet, which fed back to the student things they felt were good and things they felt needed improvement in the report.

I was fortunate to have a classroom assistant in this lesson, although to be fair,

the students needed little help during the activity and responded to the exercise in a sensible manner. This was probably because they have been participating in peer assessment activities since the start of the academic year and have been trained to comment sensibly and provide constructive criticism to their peers. If they are to make the most out of a peer assessment activity, it is important that the students have a good grounding in AfL and clearly know what is expected of them, particularly in terms of their comments to other pupils. I encouraged volunteers to read out the evaluative comments they had written about their partners' work in the lesson, a strategy I have used regularly during the year both to praise the quality of the assessors' work and to discourage students from writing anything inappropriate.

The room this particular lesson was taught in had the desks arranged in rows, although the exercise would work equally well if the tables were grouped together. They were seated alphabetically according to the register, so there was no attempt to choose the pairings. Ideally, it would be useful to have a display of images of different earthquakes, including actual newspaper reports, to refer to during the lesson, but this obviously depends on room allocation.

I had also booked a computer room, so for the second half of the lesson, the class was able to go there to work on the suggested improvements to their reports.

The other class, 7E, acted as a control group and did not experience this lesson. Instead, they continued with the usual scheme of work.

Homework 2: Both classes were set the task to complete a finished copy of their news report. For the class who had experienced the peer assessment exercise, this meant that they had the

opportunity to redraft their news report in line with the suggested improvements from this lesson.

Lesson 2: At the start of the lesson, both classes peer marked the completed news reports, using the same mark grids (see Appendix 2). The class who had experienced the first peer assessment exercise, used a different coloured pen to record these final marks on their original mark grids, so that their marks before and after the peer assessment exercise could be analysed.

Evidence Collected

A number of different evidence sources were used to answer my research questions:

- mark grids from 7O recording the students' performance both before and after the peer assessment exercise. This provided the data to investigate the first of my aims, to see if there was a difference in the quality of work produced by one class before and after a peer assessment exercise;
- mark grids from 7E recording the students' performance without experiencing the peer assessment exercise. This provided the data to allow investigation of the second of my aims, to compare the work produced by the two classes to see if the peer assessment exercise produced higher quality homework;
- I also conducted a simple questionnaire survey of 7O, to see how they felt about the peer assessment exercise; and
- a video of the peer assessment lesson was recorded.

The Role of Learning to Learn

Reflection is a key L2L skill targeted in this exercise, as the students are learning from the experience of having their rough draft

judged by another student against the mark grid. They are also using reflection by having to mark and comment on the quality of their shoulder partner's work. Resourcefulness is developed by knowing how to use the mark grid and 'Hints for Success' to identify what needs to be included for a high quality piece of work. Resilience is needed by the students when they set target areas for their shoulder partner's to improve on. They also have to listen to someone's opinion of their work, which may differ from their point of view and most importantly, learn from the mistakes made in their rough draft.

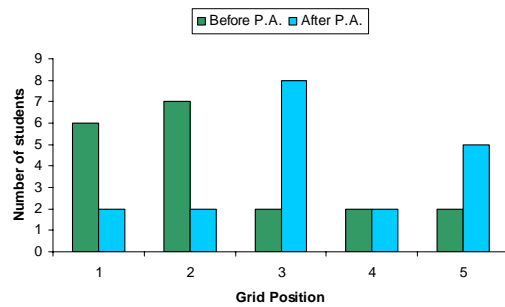
My understanding of the L2L skills has developed during the course of the project and this has meant that I am more conscious of developing independent learners of the students, something which initially attracted me to AfL. Being on the AfL working party has focussed my planning and preparation of Year 7 lessons on integrating peer and self assessment activities. However, it has certainly fed through to classes in other key stages, where I have found myself automatically using the techniques as part of my teaching.

As well as experiencing L2L strategies in lessons, Year 7 classes have a L2L Day to give them ideas about what type of learner they are and what are the qualities of a good learner to emphasise and reinforce the L2L message.

DISCUSSION OF RESULTS

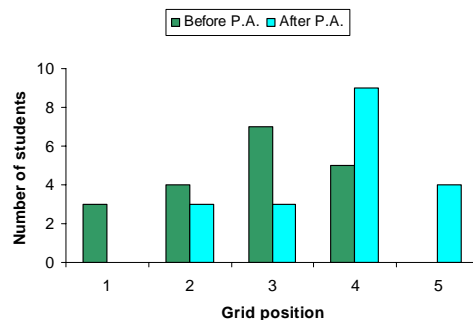
Findings

The students in 7O who had experienced the peer assessment exercise, improved in all five areas of the mark grid from their original rough drafts.



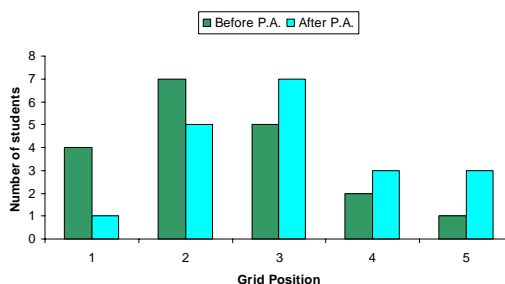
Maps and diagrams before and after peer assessment

The improvement was most marked in the Maps and Diagrams (see graph above) and Factual Content (graph below) areas of the mark grid. This may be because these were easier areas both to assess and to make improvements on.



Factual content before and after peer assessment

However, as shown in the graph below, the more challenging area of Writing Style also showed marked improvement following the peer assessment exercise.

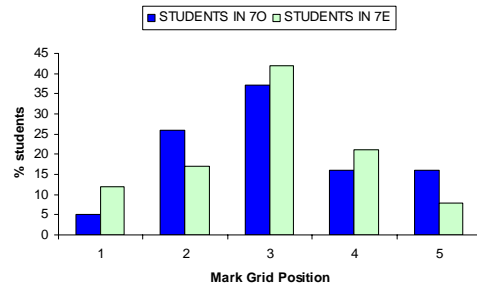


Writing style before and after peer assessment

When comparing the quality of work produced by both classes, the percentage of students within each class achieving a particular position on the mark grid were compared to eliminate the problem of

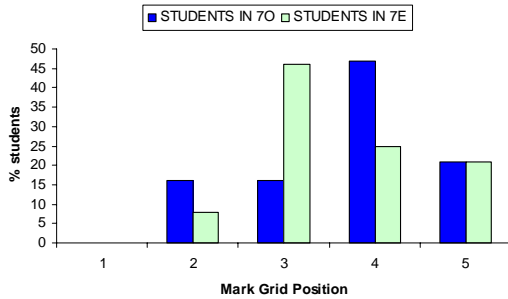
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having slightly different sample sizes on the day, due to pupil absences. The results showed that a greater proportion of students achieved the highest grid position in 7O than 7E in three out of the five areas of the mark grid. This is shown in the five graphs below.

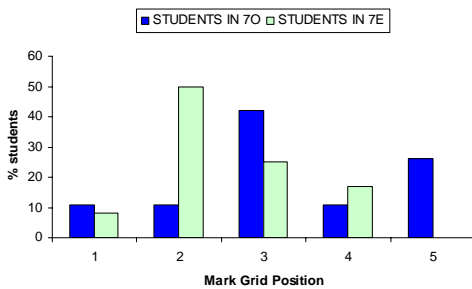


Comparison of results from 7O and 7E for writing style

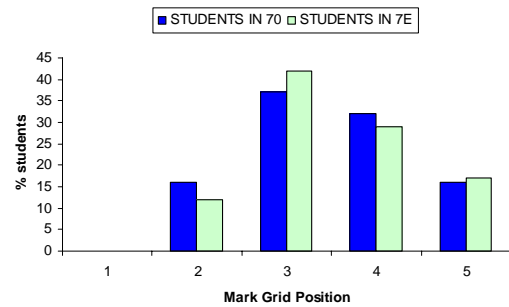
The difference in marks for writing style (immediately above) was less obvious. However, in the area of research and references, 7E outperformed 7O (below). Why this anomaly arose I am unsure. If 7E had conducted more research, I would have expected their section on Factual Content to also have achieved higher than 7O, but this was not the case.



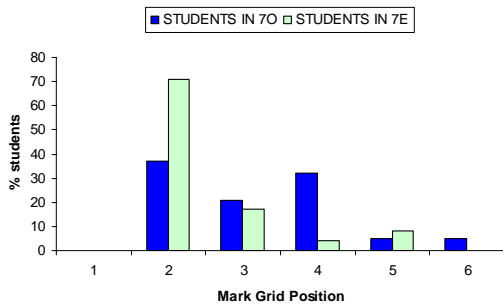
Comparison of results from 7O and 7E for factual content



Comparison of results from 7O and 7E for maps and diagrams



Comparison of results from 7O and 7E for research and referencing



Comparison of results from 7O and 7E for suggestions for future

Pupils in 7O were invited to comment on a simple questionnaire, regarding whether or not they felt the peer assessment lesson had helped them (see Appendix 3). All of their responses were positive, including:

The lesson helped because I knew what I had to do to improve.

The comments my partner gave me helped me to realise what I needed to do to improve.

Because of the help I got on the rough draft lesson – I added references and ideas for the future to prevent damage.

There were several benefits or positive aspects of the project. I was initially concerned about how accessible the language of the mark grid would be to the students. However, they were able to use the mark grid with little teacher assistance. This was born out in verbal discussion with both groups at the end of the project.

The general feeling from the students was that they felt that it was easier to use the grid and that they could more confidently assess their peers with a mark grid than if they had been asked to write their own feedback comments. The students who took part in the peer assessment lesson seemed to be able to write some meaningful comments on their partners' evaluation sheet. In general discussion with the students, they felt that the scaffold had helped them write their usual evaluative paragraphs but they also felt that there was an overkill on the, 'I particularly liked' – one overall comment would have sufficed.

Extensions and Changes to the Method

I didn't make any changes to the method as the project progressed.

The most obvious extension to the project in the future would be to study the effects of the peer assessment activity on a much larger number of students, i.e. the whole year group, to make the results more statistically valid. However, this would then bring in problems of more than one teacher being involved in delivering the work. It could then be argued that it was the difference in teaching that caused any differences that may be seen in the quality of the work produced.

Another extension could be to investigate the effects of different ability pair groupings on peer assessment. There was a large variation in the quality and usefulness of the evaluative comments from the peer assessment exercise. This suggests that it may be necessary to pair similar abilities together or students with only slightly different abilities, for peer assessment exercises, which would allow them to give comments appropriate to the ability of their partner.

Other possible extensions which link in with this would be to investigate the degree of improvement of particular underachieving pupils and a comparison of relative improvement between high and low ability pupils

There were few negative aspects of the project but nonetheless, these pose questions that generate possible extensions to the project in the future. Some students in 70 (three) forgot their homework in lesson 1 and three more in lesson 2. This meant that, taking into account absentees over the two lessons, a large proportion (11 out of 30) were unable to take advantage of both parts of the project. This suggests that for subjects who only see their students once a week to make the most of AfL, peer assessment exercises should perhaps be set as in class exercises, rather than for homework. However, this in itself poses problems of coverage of the scheme of work.

Finally, I had to cut out a section of the current scheme of work (approximately one and a half lessons) to include this AfL project. For subjects with a limited amount of contact time with their students, this again leads to issues about how much of the curriculum can be covered.

CONCLUSION

Developing this Approach

From the classroom teacher's point of view, I will think more carefully about groupings/ pairings for peer assessment exercises, possibly trying to place pupils of similar abilities together for such activities or alternatively, changing the pairings on a regular basis. It would seem appropriate in this instance to investigate using co-operative learning heterogeneous teams, but how often these teams of four were changed would depend on the frequency of lessons they experienced in a subject.

From a departmental point of view, the benefits of this sort of peer assessment approach need to be further incorporated into our teaching. However, due to the time needed to cover these activities, there are obviously implications on the breadth of the curriculum that can be taught. It will need careful consideration of which AfL activities are most beneficial to the students and which areas of the scheme of work we currently teach can be cut out to provide the time needed for them.

At the school scale, as a result of the AfL groups' work this academic year, the school policy on assessment will change for Year 7 in 2005/6, so that all teachers of Year 7 pupils will be expected to use AfL principles. This will form the basis of the school's Year Three report.

Summary

The most important impact of my findings are that peer assessment exercises, such as the one covered in this project, will be used on a much more regular basis across all years in geography. The project has been extremely successful in highlighting the benefits of AfL techniques and forcing me to focus on my own teaching to see which strategies bring the best out of the pupils I teach in a particular situation. Next year, AfL will be rolled out across all


departments in Year 7, which has major implications for the way we teach, assess and report on students. As a lead learner in AfL, I am now the source of expertise in this area for the geography department and as such, will have the responsibility for taking forward the AfL agenda.

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Pacific Institute, www.pac-inst.com

APPENDIX 1


Homework task sheet



Learning Objective: To research an earthquake of your choice and produce a newspaper report on this earthquake.

Task: You are a reporter for a national newspaper. News has just come in of an earthquake. Your editor has given you the front page to report the event. You can either use the page layout below or one of your own design. You may wish to use a computer to make it look more professional. Your report will look best on a blank piece of A4 or A3 paper.

Example of a front page layout



Hints for success

- ✓ Your report should cover the following factual information:
When and where did the earthquake hit?
How strong was the earthquake (Richter or Mercalli scale)?
What damage did it cause to the landscape and people?
Why did it happen here? A diagram may help to explain this.
- ✓ Are there any interviews with people caught up in the earthquake?
- ✓ Think about your writing style, you are reporting on a very dramatic and frightening event.
- ✓ Make sure you use the correct geographical terminology in your report.
- ✓ Include a map of the area affected. Try to annotate (label) this to show details of why the earthquake happened and what damage was caused.
- ✓ Can you suggest ways of reducing the damage from a future earthquake?
- ✓ Include a list of the references you used for your research.

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APPENDIX 2

Peer assessment handouts

FACTUAL CONTENT	The report includes some basic facts about an earthquake.	The report includes some limited details about the earthquake and the damage caused.	The report gives details of the earthquake with a good description of the damage caused.	Very good research means that the report covers the factual details of the earthquake well, with lots of information about the damage caused.	Excellent research means that the report is full of a wide range of factual details about the earthquake, its cause and effects, including interviews with affected people.
WRITING STYLE AND USE OF GEOGRAPHICAL TERMINOLOGY	Simple report written using basic vocabulary.	The student writes a factual report with little use of Geographical terminology.	The student writes a mainly factual piece, with some attempt to use a dramatic reporting style. They begin to use correct Geographical terminology in all explanations.	The student writes using a dramatic reporting style. Good use of appropriate Geographical terminology throughout.	The student writes fluently, using an individual and very dramatic reporting style. The causes of the earthquake are clearly explained to the reader. Excellent and accurate use of Geographical terminology throughout.
MAPS AND DIAGRAMS	The student does not include any maps or diagrams.	The student includes a simple map or diagram.	The student includes clear map(s) and diagram(s).	The student includes accurate and very detailed map(s) and diagram(s) which have some annotations.	The student includes accurate and very detailed map(s) and diagram(s), which are clearly annotated to explain what they show.
SUGGESTIONS FOR FUTURE	The student does not include any ways of reducing the damage from a future earthquake.	The student gives few suggestions of ways of reducing the damage from a future earthquake.	The student suggests some ways of reducing the damage from a future earthquake.	The student suggests a range of ways of reducing the damage from a future earthquake and gives some explanation of how they would help.	The student suggests a wide range of ways of reducing the damage from a future earthquake and explains clearly how they would help. They also give their opinion of which are the best options for their chosen location.
RESEARCH AND REFERENCES	The student has done very little research.	The student has done some research but this has not been very thorough.	The student has obviously done some good research, but they have not included a list of their references.	The student has used a number of resources in their research and there is a basic list of references.	There is clear evidence (i.e. detailed list of references) that the student has used a wide range of resources in their research, both on the INTERNET and also books/newspapers.

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PEER ASSESSMENT 1

Name of Assessor: _____

In which of the five areas of the mark scheme has the student done well?

Give details of particularly good aspects within these five areas (you do not have to write something for all of them).

FACTUAL CONTENT - *I particularly liked ...*

WRITING STYLE AND USE OF GEOGRAPHICAL TERMINOLOGY - *I particularly liked ...*

MAPS AND DIAGRAMS - *I particularly liked ...*

SUGGESTIONS FOR FUTURE - *I particularly liked ...*

RESEARCH AND REFERENCES - *I particularly liked ...*

What can the student do to improve the quality of their news report?

Write down specific things that they need to concentrate on, using the mark scheme and the 'hints for success' on the task sheet to help you.

To improve, you need to ...

APPENDIX 3

Questionnaire

How do you rate your knowledge of earthquakes? Give yourself a grade from 1-5 (5 being excellent, 1 being poor).

How would you rate your ability to write a news report on earthquakes? Give yourself a grade from 1-5 (5 being excellent, 1 being poor).

Did the quality of your news report improve between drafts?

If so, what do you think helped you to improve?

What do you feel that you have learnt from this activity?