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(51) INT CL:
G09B 7/00 (2006.01) ***G06F 17/24*** (2006.01)

(56) Documents Cited:
EP 1672529 A2 **EP 1585086 A1**
WO 2001/090928 A1 **WO 1998/043223 A1**
JP 2002055593 A
Premark: A system designed to organising course work for assessment
HyLighter: An effective interactive annotation innovation for distance eductaion -2005

(58) Field of Search:
INT CL **G06F, G09B**
Other: **Online:WPI,EPODOC; Internet:Google**

(54) Abstract Title: **A method of facilitating assessment of a coursework answer**

(57) A method for facilitating assessment of an answer to a coursework question and moderating the assessment, the method comprising the steps of displaying at least part of a representation of a coursework answer on a display of a computer, displaying a list of learning outcomes statements, selecting a learning outcome statement from the list of learning outcome statements and placing the learning outcome statement on the representation of the coursework answer at a location evidencing fulfilment of the learning outcome statement. Preferably the statement is placed in a layer over said representation and a selection of assessor icons may be provided associated with different colours allowing different statements to be associated with different assessors.

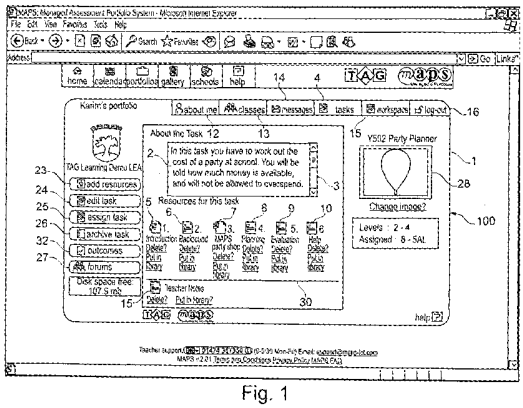
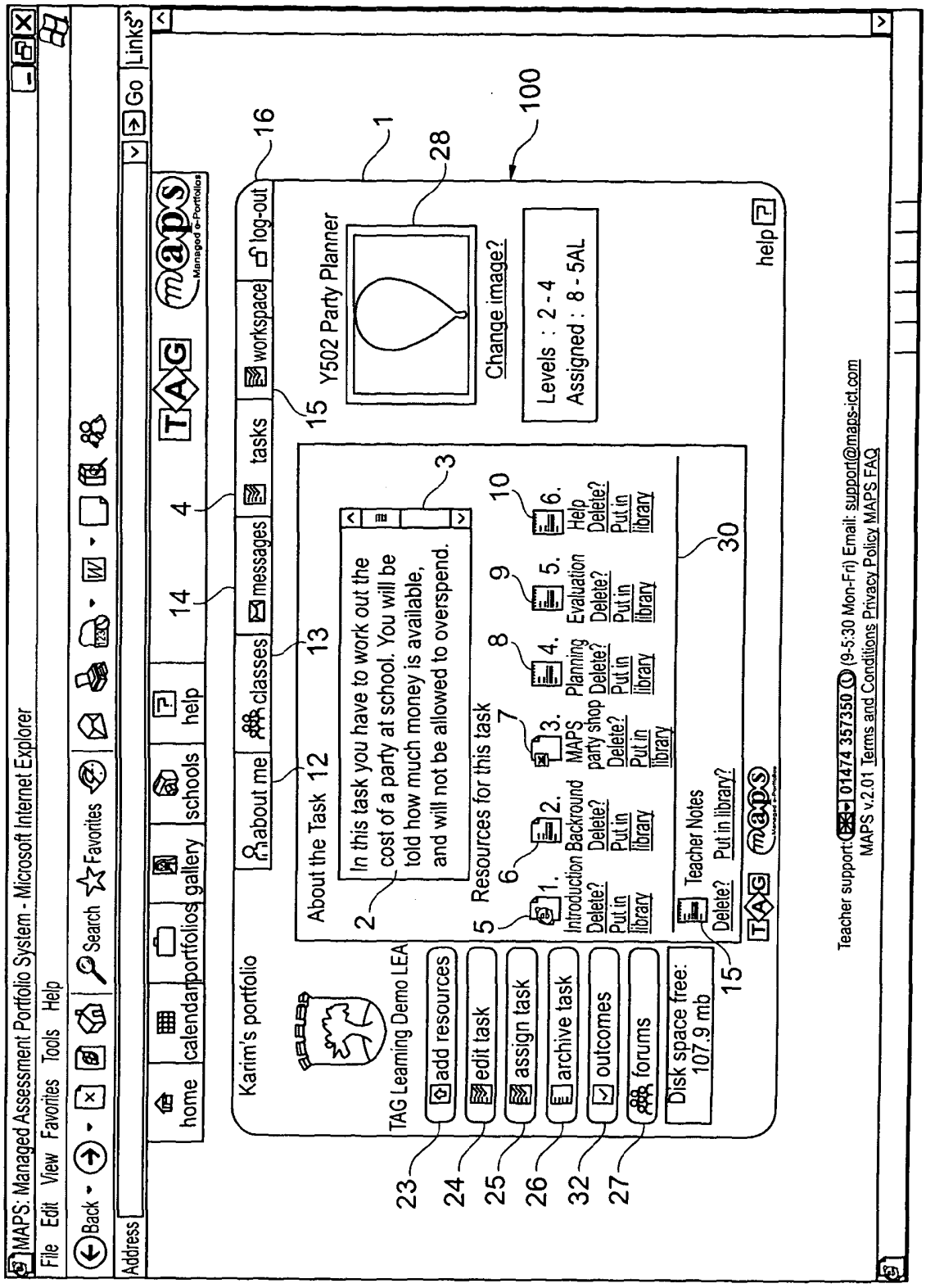


Fig. 1

GB 2462612 A

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.


MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Go Links
home
calendar
portfolios
gallery
schools
help
about me
classes
messages
tasks
workspace
log-out
TAG
maps
Managed e-Portfolios
Karim's portfolio
TAG Learning Demo LEA
add resources
edit task
assign task
archive task
outcomes
forums
Disk space free: 107.9 mb
About the Task
In this task you have to work out the cost of a party at school. You will be told how much money is available, and will not be allowed to overspend.
Resources for this task
1. Introduction Delete? Put in library
2. Backround Delete? Put in library
3. MAPS party shop Delete? Put in library
4. Planning Delete? Put in library
5. Evaluation Delete? Put in library
6. Help Delete? Put in library
Teacher Notes
Delete? Put in library?
Y502 Party Planner
Change image?
Levels : 2 - 4
Assigned : 8 - 5AL
help
Teacher support: 01474 357350 (9-5:30 Mon-Fri) Email: support@maps-ict.com
MAPS v.2.01 Terms and Conditions Privacy Policy MAPS FAQ
100
1
2
3
4
5
6
7
8
9
10
12
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14
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16
23
24
25
26
27
28
30
32

Fig. 1

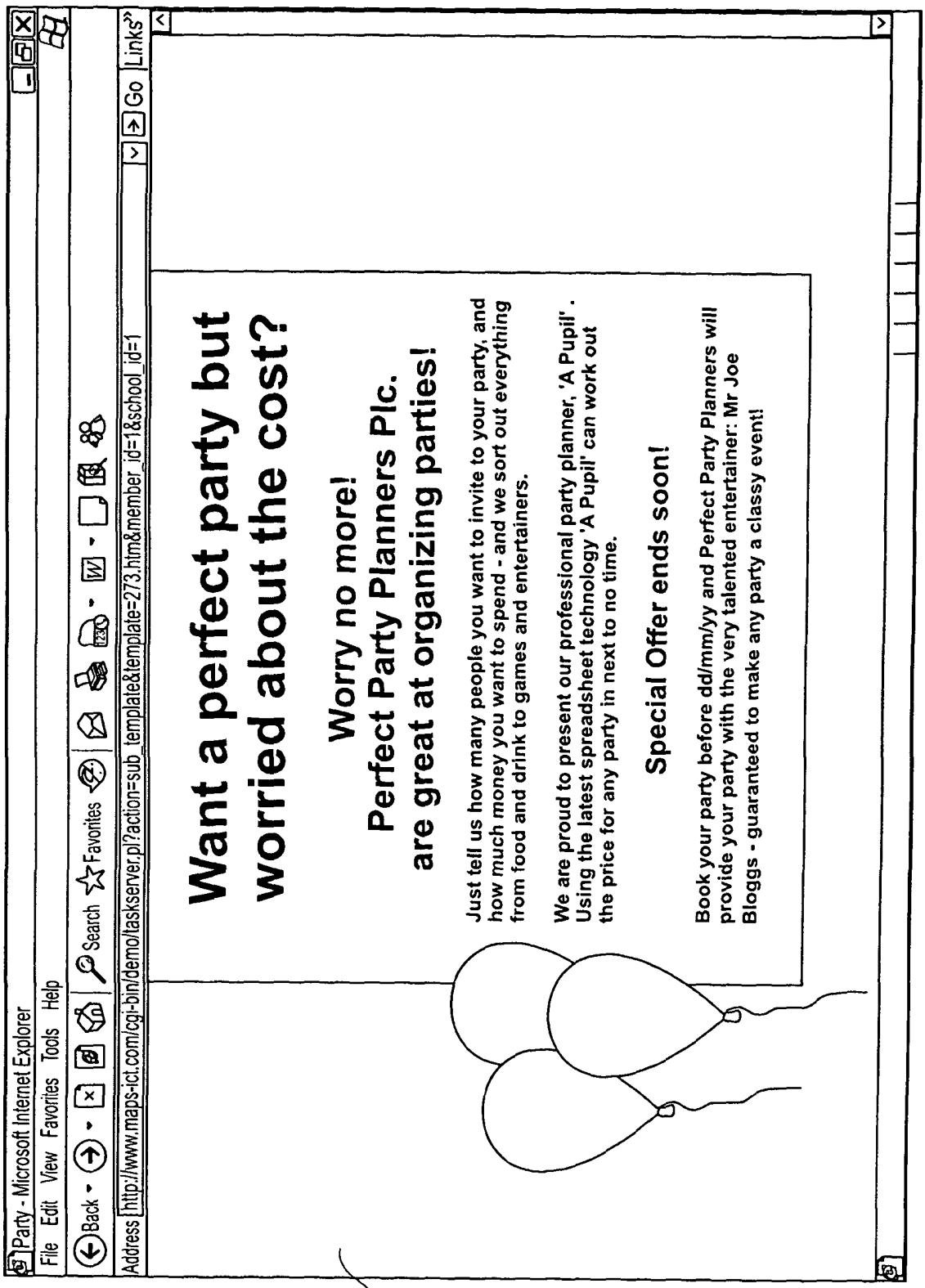
Party - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back
Search
Favorites
Address http://www.maps-ict.com/cgi-bin/demo/taskserver.pl?action=sub_template&template=273.htm&member_id=1&school_id=1
Go
Links
Want a perfect party but worried about the cost?
Worry no more!
Perfect Party Planners Plc.
are great at organizing parties!
Just tell us how many people you want to invite to your party, and how much money you want to spend - and we sort out everything from food and drink to games and entertainers.
We are proud to present our professional party planner, 'A Pupil'. Using the latest spreadsheet technology 'A Pupil' can work out the price for any party in next to no time.
Special Offer ends soon!
Book your party before dd/mm/yy and Perfect Party Planners will provide your party with the very talented entertainer: Mr Joe Bloggs - guaranteed to make any party a classy event!
5

Fig. 2

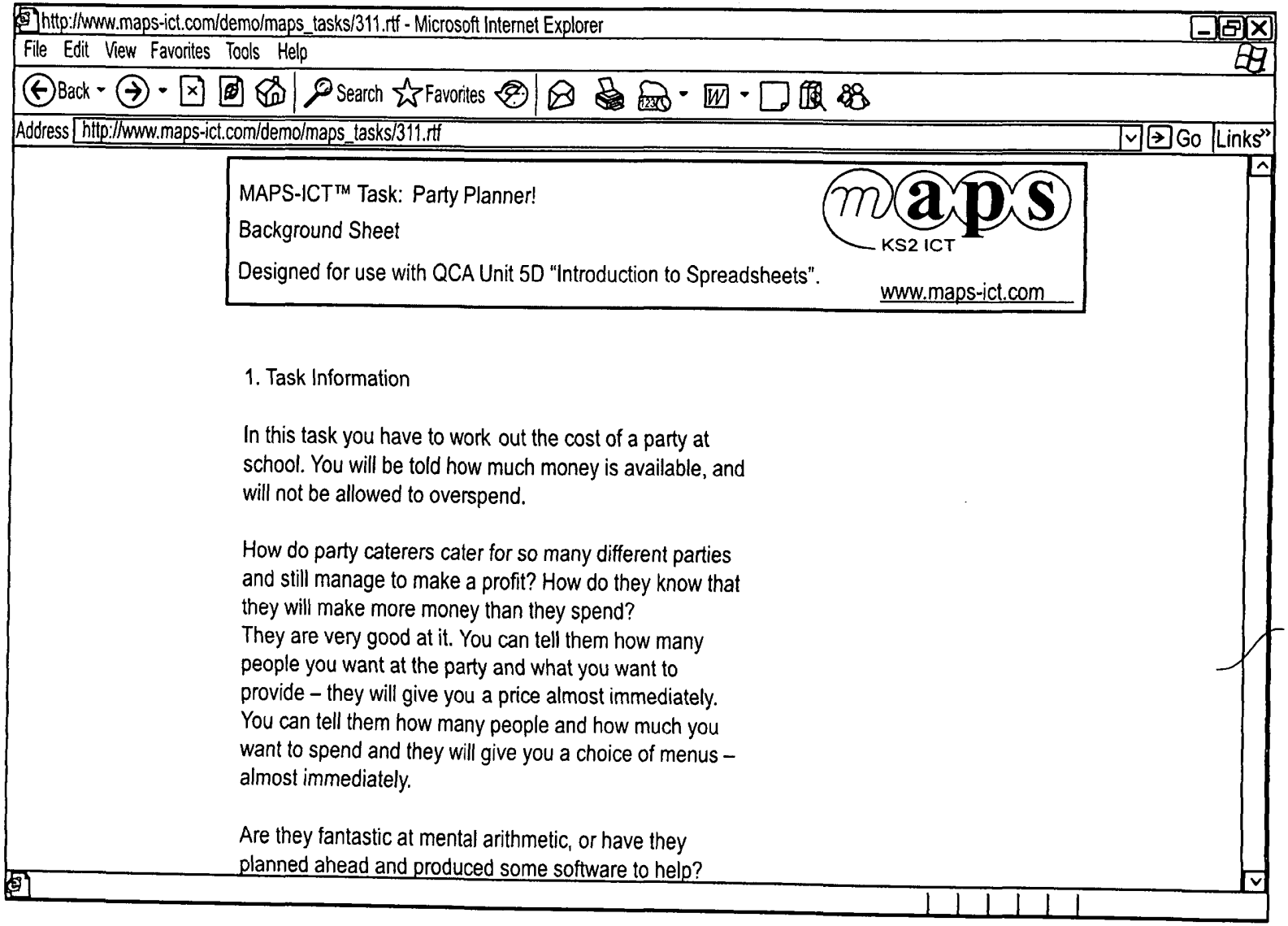
http://www.maps-ict.com/demo/maps_tasks/311.rtf - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address http://www.maps-ict.com/demo/maps_tasks/311.rtf
Go Links
MAPS-ICT™ Task: Party Planner!
Background Sheet
Designed for use with QCA Unit 5D "Introduction to Spreadsheets".
maps KS2 ICT
www.maps-ict.com
1. Task Information
In this task you have to work out the cost of a party at school. You will be told how much money is available, and will not be allowed to overspend.
How do party caterers cater for so many different parties and still manage to make a profit? How do they know that they will make more money than they spend?
They are very good at it. You can tell them how many people you want at the party and what you want to provide – they will give you a price almost immediately. You can tell them how many people and how much you want to spend and they will give you a choice of menus – almost immediately.
Are they fantastic at mental arithmetic, or have they planned ahead and produced some software to help?
6

Fig. 3

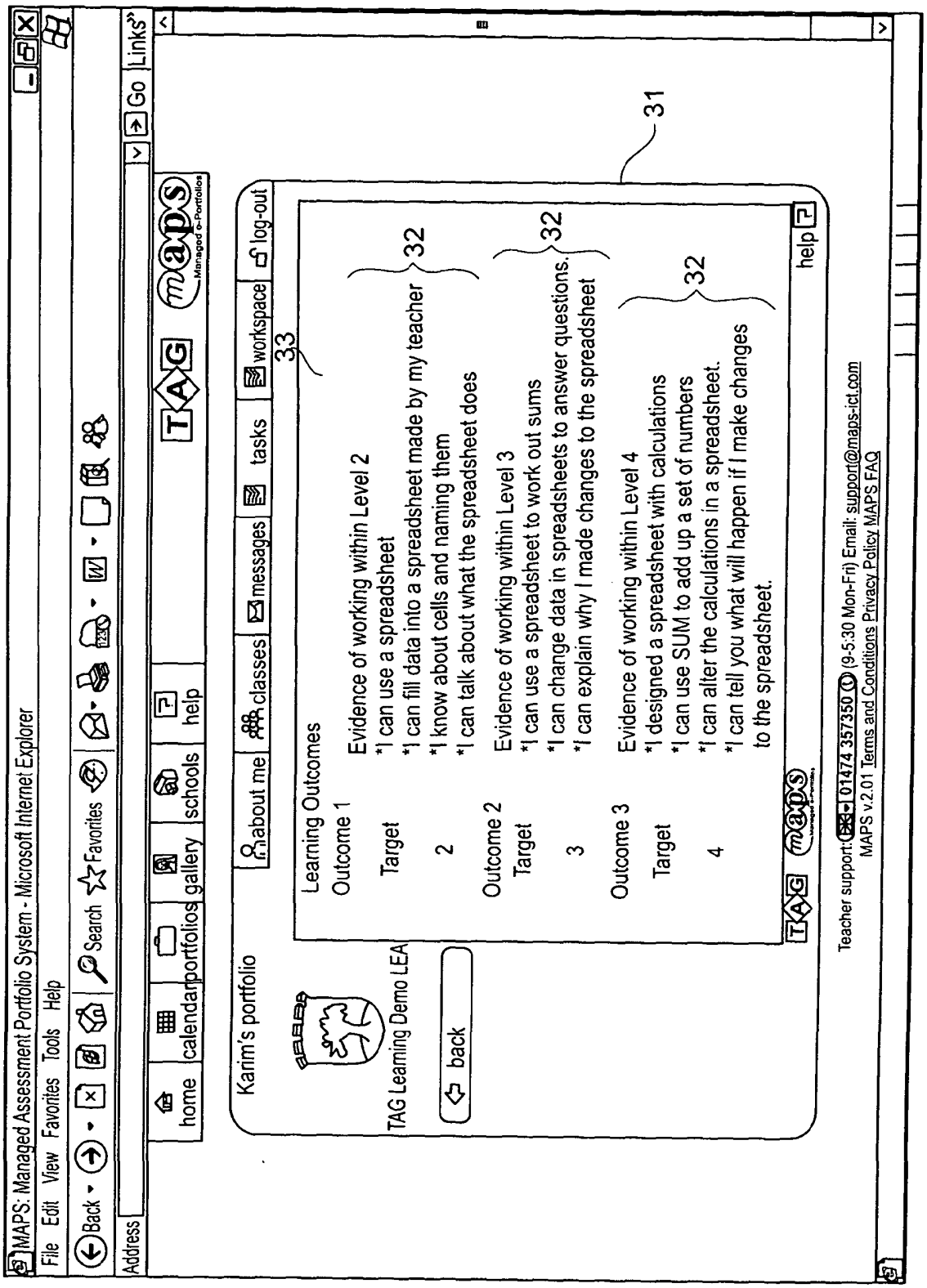
MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Links
home
calendar
portfolios
gallery
schools
help
TAG
maps
Managed e-Portfolios
Karim's portfolio
about me
classes
messages
tasks
workspace
log-out
33
31
TAG Learning Demo LEA
back
Learning Outcomes
Outcome 1
Evidence of working within Level 2
Target
*I can use a spreadsheet
*I can fill data into a spreadsheet made by my teacher
2
*I know about cells and naming them
*I can talk about what the spreadsheet does
32
Outcome 2
Evidence of working within Level 3
Target
*I can use a spreadsheet to work out sums
*I can change data in spreadsheets to answer questions.
3
*I can explain why I made changes to the spreadsheet
32
Outcome 3
Evidence of working within Level 4
Target
*I designed a spreadsheet with calculations
*I can use SUM to add up a set of numbers
4
*I can alter the calculations in a spreadsheet.
*I can tell you what will happen if I make changes to the spreadsheet.
32
help
Teacher support: 01474 357350 (9-5:30 Mon-Fri) Email: support@maps-ict.com
MAPS v.2.01 Terms and Conditions Privacy Policy MAPS FAQ

Fig. 4

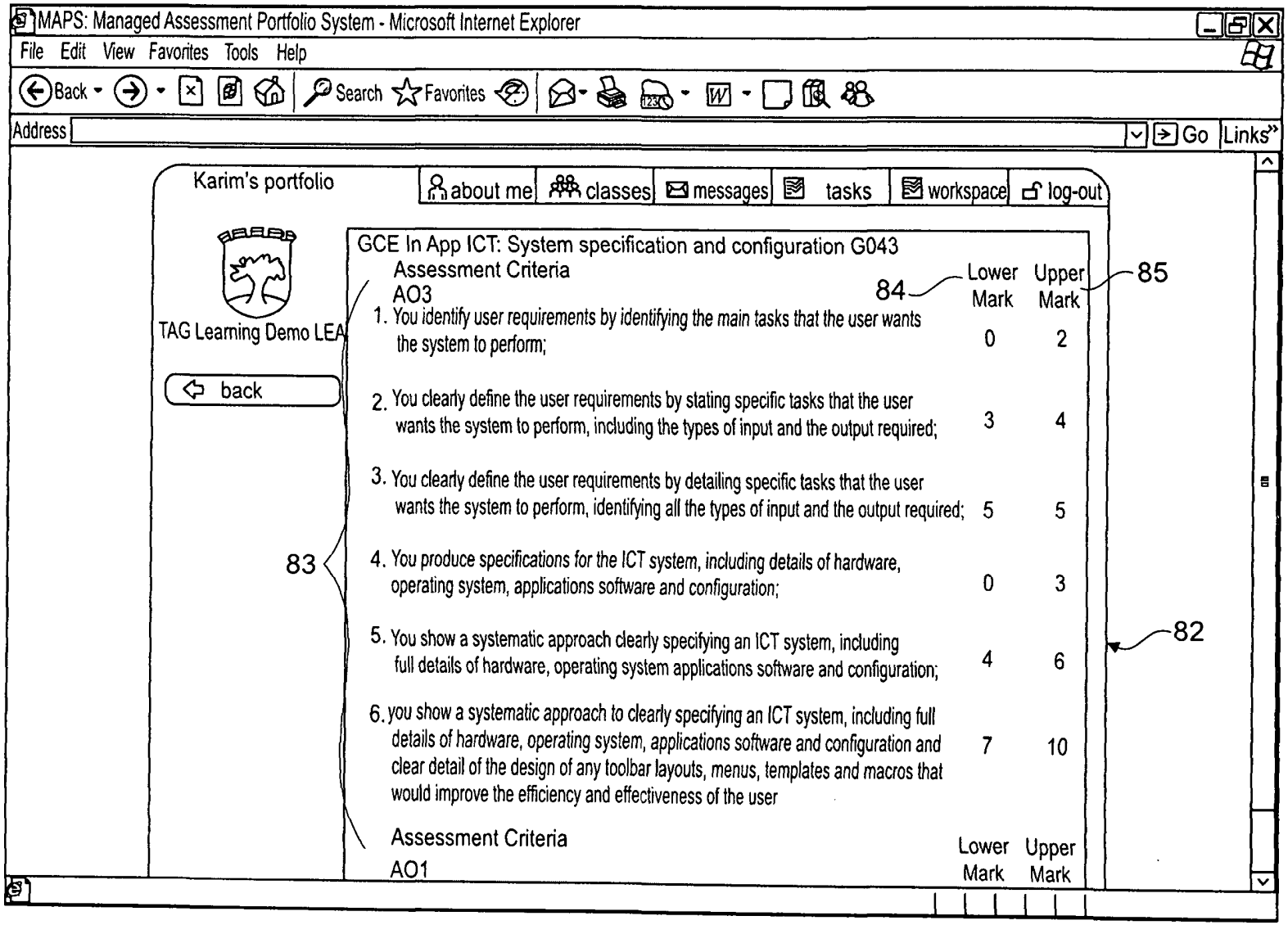
MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address Go Links
Karim's portfolio
about me classes messages tasks workspace log-out
TAG Learning Demo LEA
back
GCE In App ICT: System specification and configuration G043
Assessment Criteria
AO3
84
Lower Mark
Upper Mark
85
1. You identify user requirements by identifying the main tasks that the user wants the system to perform; 0 2
2. You clearly define the user requirements by stating specific tasks that the user wants the system to perform, including the types of input and the output required; 3 4
3. You clearly define the user requirements by detailing specific tasks that the user wants the system to perform, identifying all the types of input and the output required; 5 5
83
4. You produce specifications for the ICT system, including details of hardware, operating system, applications software and configuration; 0 3
5. You show a systematic approach clearly specifying an ICT system, including full details of hardware, operating system applications software and configuration; 4 6
82
6. you show a systematic approach to clearly specifying an ICT system, including full details of hardware, operating system, applications software and configuration and clear detail of the design of any toolbar layouts, menus, templates and macros that would improve the efficiency and effectiveness of the user 7 10
Assessment Criteria
AO1
Lower Mark
Upper Mark

Fig. 5

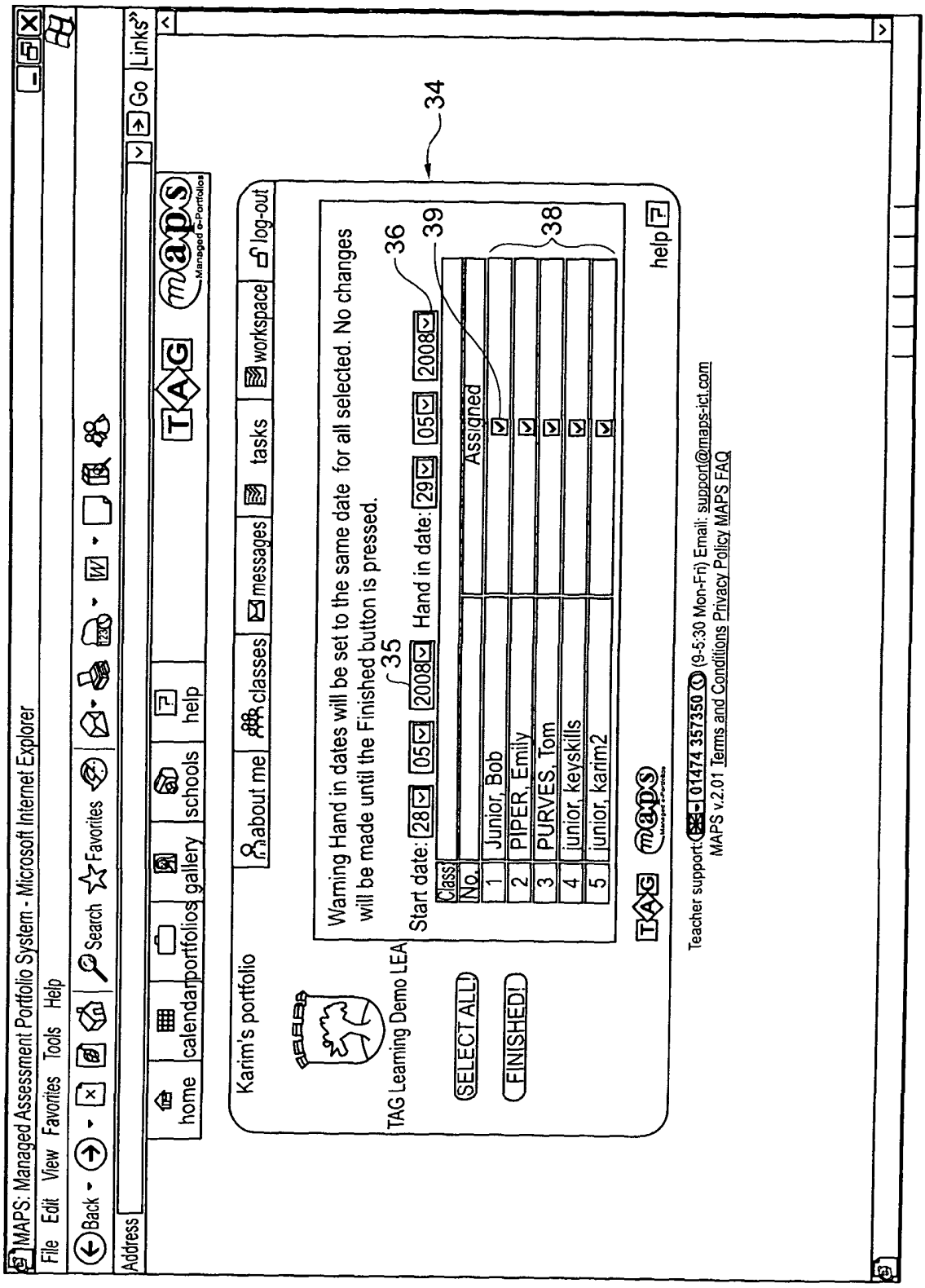
MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Links
home
calendar
portfolios
gallery
schools
help
TAG maps
about me
classes
messages
tasks
workspace
log-out
Karim's portfolio
34
Warning Hand in dates will be set to the same date for all selected. No changes will be made until the Finished button is pressed.
35
36
39
Start date: 28 05 2008 Hand in date: 29 05 2008
38
Class No.
Assigned
1 Junior, Bob
2 PIPER, Emily
3 PURVES, Tom
4 junior, kevskills
5 junior, karim2
TAG Learning Demo LEA
SELECT ALL
FINISHED!
help
TAG maps
Teacher support: 0844 - 01474 357350 (9-5:30 Mon-Fri) Email: support@maps-ict.com
MAPS v.2.01 Terms and Conditions Privacy Policy MAPS FAQ

Fig. 6

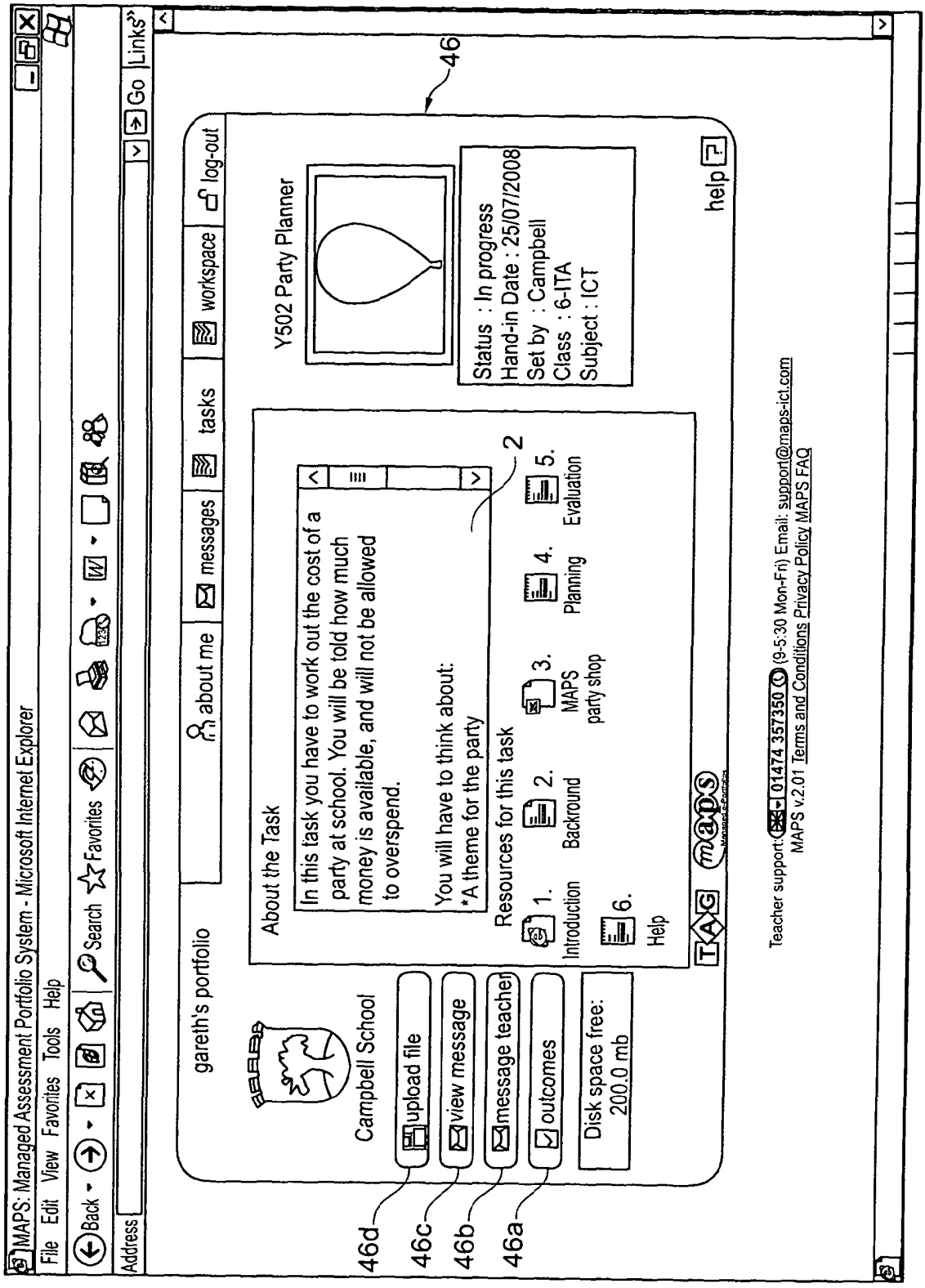
MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Go Links
gareth's portfolio
about me
messages
tasks
workspace
log-out
help
Campbell School
upload file
view message
message teacher
outcomes
Disk space free: 200.0 mb
About the Task
In this task you have to work out the cost of a party at school. You will be told how much money is available, and will not be allowed to overspend.
You will have to think about:
*A theme for the party
Resources for this task
1. Introduction
2. Backround
3. MAPS party shop
4. Planning
5. Evaluation
6. Help
Y502 Party Planner
Status : In progress
Hand-in Date : 25/07/2008
Set by : Campbell
Class : 6-ITA
Subject : ICT
TAG maps
Teacher support: 01474 357350 (9-5:30 Mon-Fri) Email: support@maps-ict.com
MAPS v.2.01 Terms and Conditions Privacy Policy MAPS FAQ
46
46a
46b
46c
46d
2

Fig. 6A

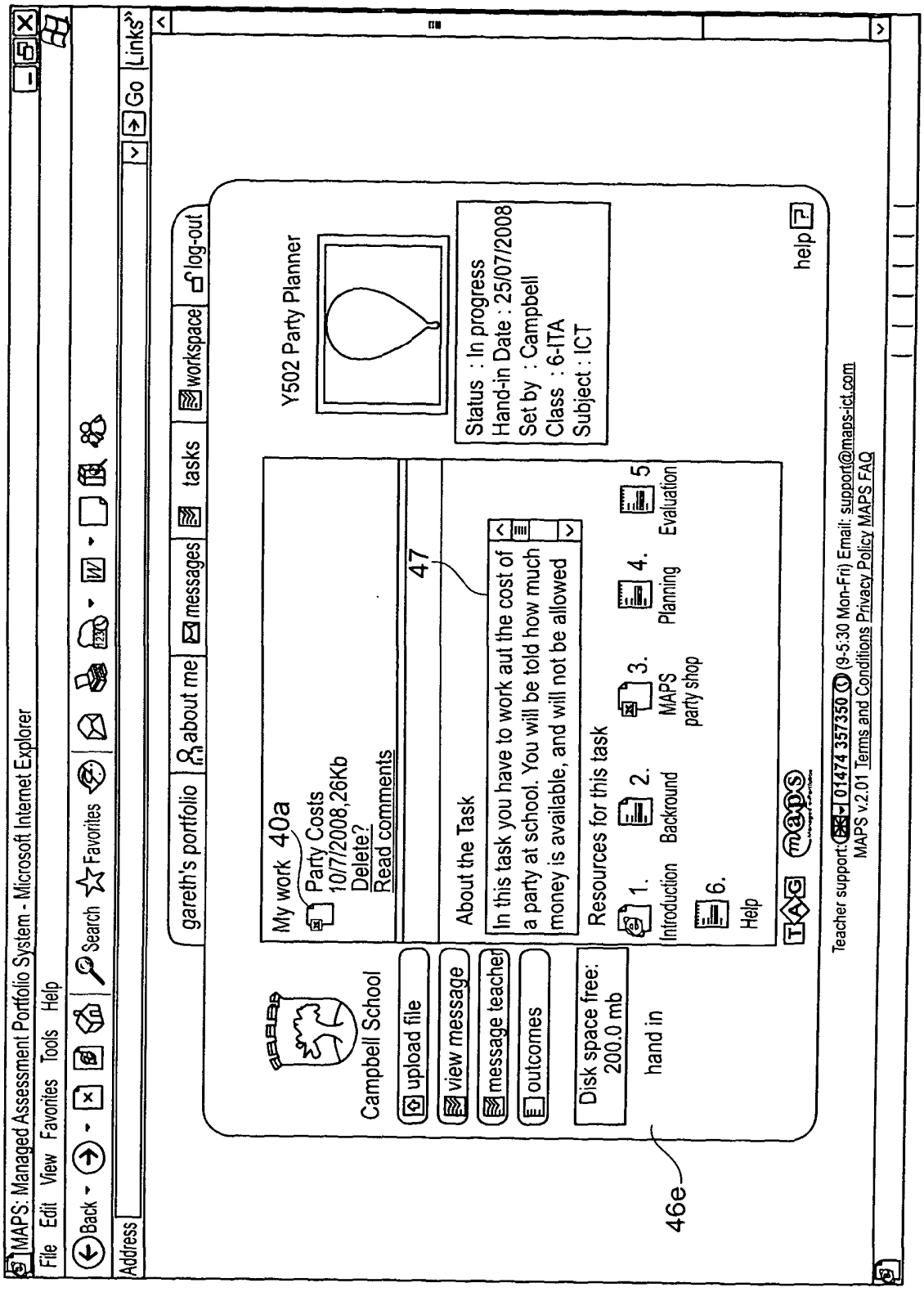
MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Go Links
gareth's portfolio
about me
messages
tasks
workspace
log-out
My work 40a
Party Costs
10/7/2008,26Kb
Delete?
Read comments
47
About the Task
In this task you have to work aut the cost of a party at school. You will be told how much money is available, and will not be allowed
Resources for this task
1. Introduction
2. Backround
3. MAPS party shop
4. Planning
5 Evaluation
6. Help
Y502 Party Planner
Status : In progress
Hand-in Date : 25/07/2008
Set by : Campbell
Class : 6-ITA
Subject : ICT
Campbell School
upload file
view message
message teacher
outcomes
Disk space free: 200.0 mb
hand in
46e
TAG maps
help
Teacher support: 01474 357350 (9-5:30 Mon-Fri) Email: support@maps-ict.com
MAPS v.2.01 Terms and Conditions Privacy Policy MAPS FAQ

Fig. 7

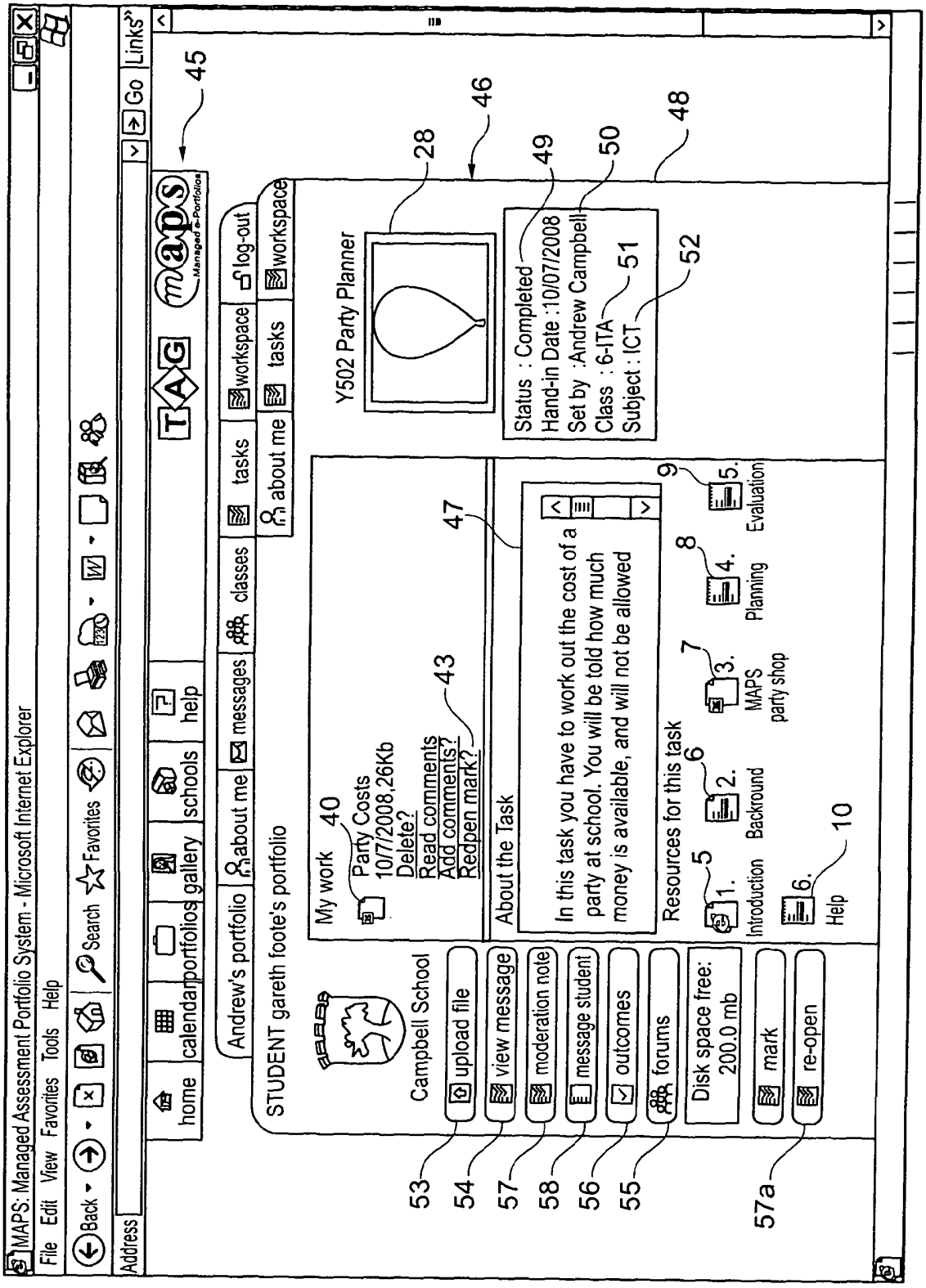
MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Links
Go
home
calendar
portfolios
gallery
schools
help
TAG
maps
Managed e-Portfolios
45
Andrew's portfolio
about me
messages
classes
tasks
workspace
log-out
about me
tasks
workspace
STUDENT gareth foote's portfolio
Campbell School
upload file
view message
moderation note
message student
outcomes
forums
Disk space free: 200.0 mb
mark
re-open
My work
40
Party Costs 10/7/2008,26Kb
Delete?
Read comments
Add comments?
Redpen mark?
43
47
About the Task
In this task you have to work out the cost of a party at school. You will be told how much money is available, and will not be allowed
Resources for this task
6
1. Introduction
2. Backround
3. MAPS party shop
4. Planning
5. Evaluation
6. Help
10
Y502 Party Planner
28
46
Status : Completed
Hand-in Date :10/07/2008
Set by :Andrew Campbell
Class : 6-ITA
Subject : ICT
49
50
51
52
48
53
54
57
58
56
55
57a
5
7
8
9

Fig. 7A

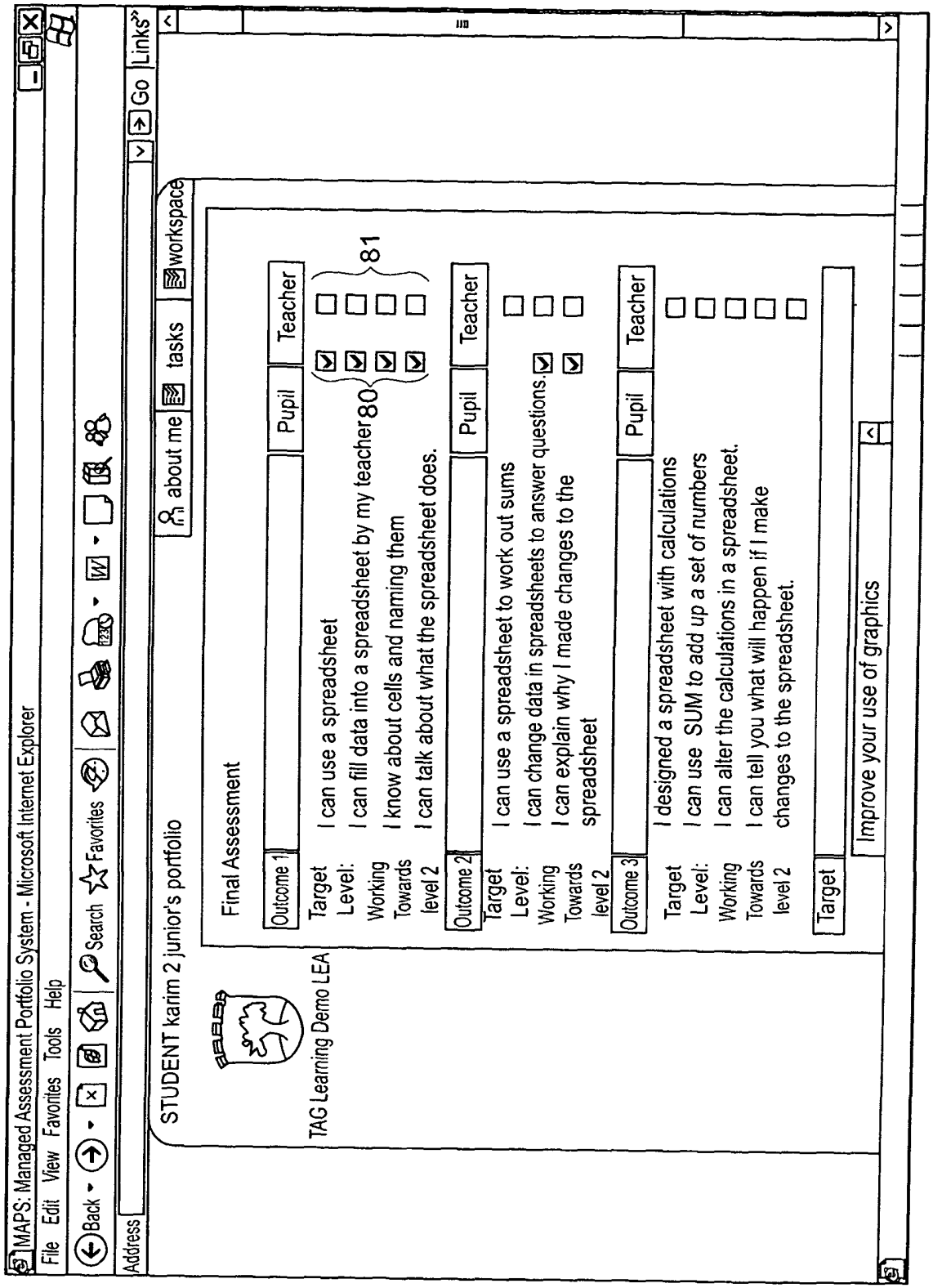
MAPS: Managed Assessment Portfolio System - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites
Address
Go Links
STUDENT karim 2 junior's portfolio
about me
tasks
workspace
TAG Learning Demo LEA
Final Assessment
Outcome 1
Pupil
Teacher
Target Level:
I can use a spreadsheet
I can fill data into a spreadsheet by my teacher
I know about cells and naming them
I can talk about what the spreadsheet does.
80
81
Working Towards level 2
Outcome 2
Pupil
Teacher
Target Level:
I can use a spreadsheet to work out sums
I can change data in spreadsheets to answer questions.
I can explain why I made changes to the spreadsheet
Working Towards level 2
Outcome 3
Pupil
Teacher
Target Level:
I designed a spreadsheet with calculations
I can use SUM to add up a set of numbers
I can alter the calculations in a spreadsheet.
I can tell you what will happen if I make changes to the spreadsheet.
Working Towards level 2
Target
Improve your use of graphics

Fig. 8

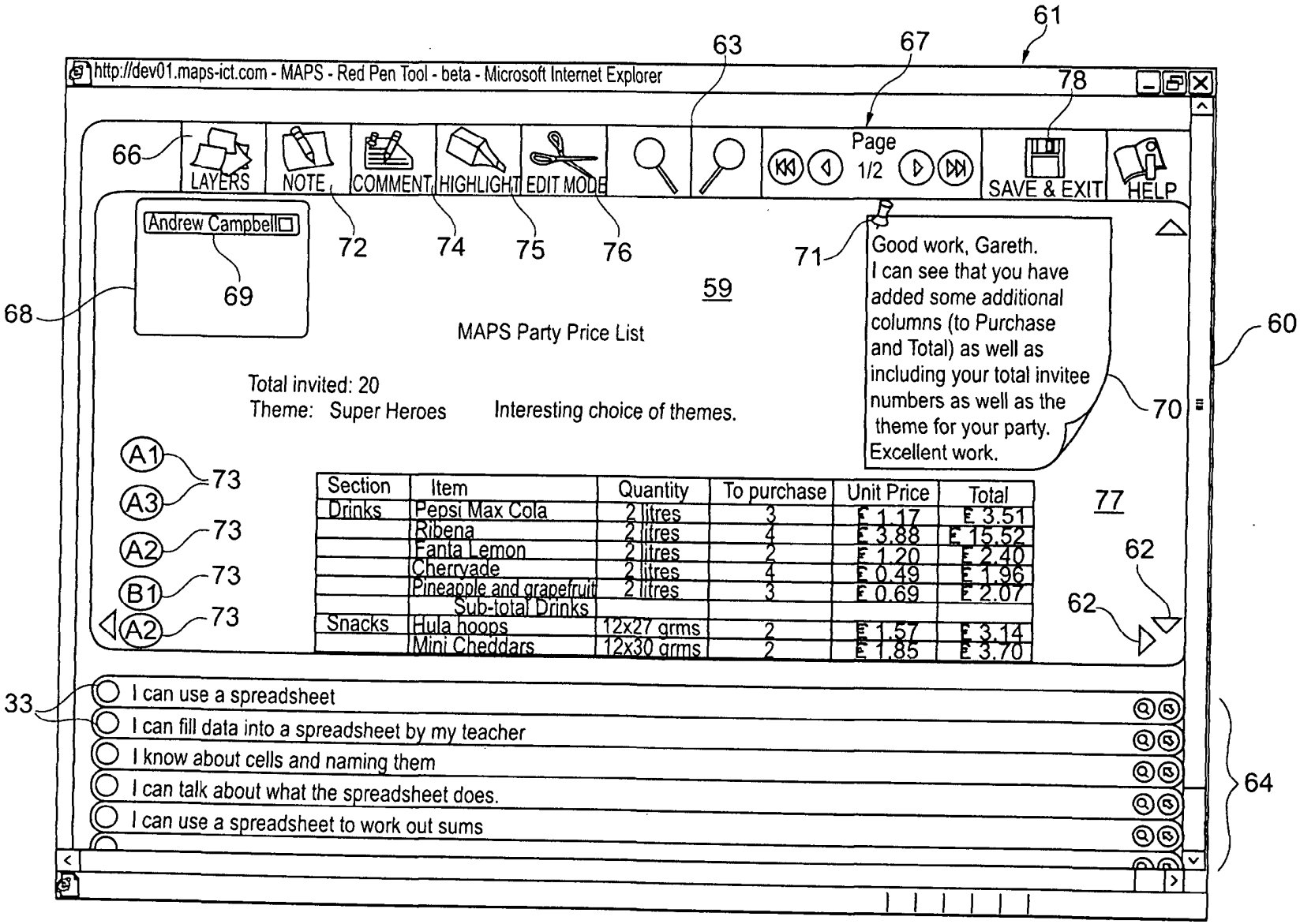
61
63
67
78
http://dev01.maps-ict.com - MAPS - Red Pen Tool - beta - Microsoft Internet Explorer
66
LAYERS
NOTE
COMMENT
HIGHLIGHT
EDIT MODE
Page 1/2
SAVE & EXIT
HELP
Andrew Campbell
69
72
74
75
76
71
59
68
MAPS Party Price List
Total invited: 20
Theme: Super Heroes
Interesting choice of themes.
Good work, Gareth.
I can see that you have added some additional columns (to Purchase and Total) as well as including your total invitee numbers as well as the theme for your party.
Excellent work.
70
60
A1
A3
A2
B1
A2
73
73
73
73
Section
Item
Quantity
To purchase
Unit Price
Total
Drinks
Pepsi Max Cola
2 litres
3
£ 1.17
£ 3.51
Ribena
2 litres
4
£ 3.88
£ 15.52
Fanta Lemon
2 litres
2
£ 1.20
£ 2.40
Cherryade
2 litres
4
£ 0.49
£ 1.96
Pineapple and grapefruit
2 litres
3
£ 0.69
£ 2.07
Sub-total Drinks
Snacks
Hula hoops
12x27 grms
2
£ 1.57
£ 3.14
Mini Cheddars
12x30 grms
2
£ 1.85
£ 3.70
77
62
62
33
I can use a spreadsheet
I can fill data into a spreadsheet by my teacher
I know about cells and naming them
I can talk about what the spreadsheet does.
I can use a spreadsheet to work out sums
64
11/16

Fig. 9

Receiving and processing electronic files

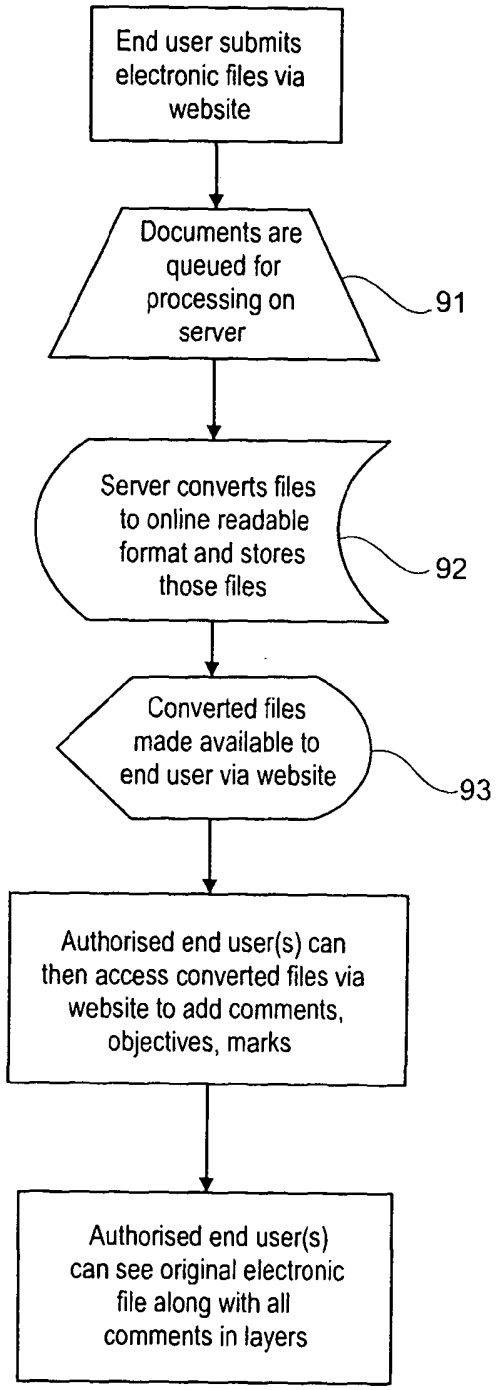

Fig. 10

Diagram of Network

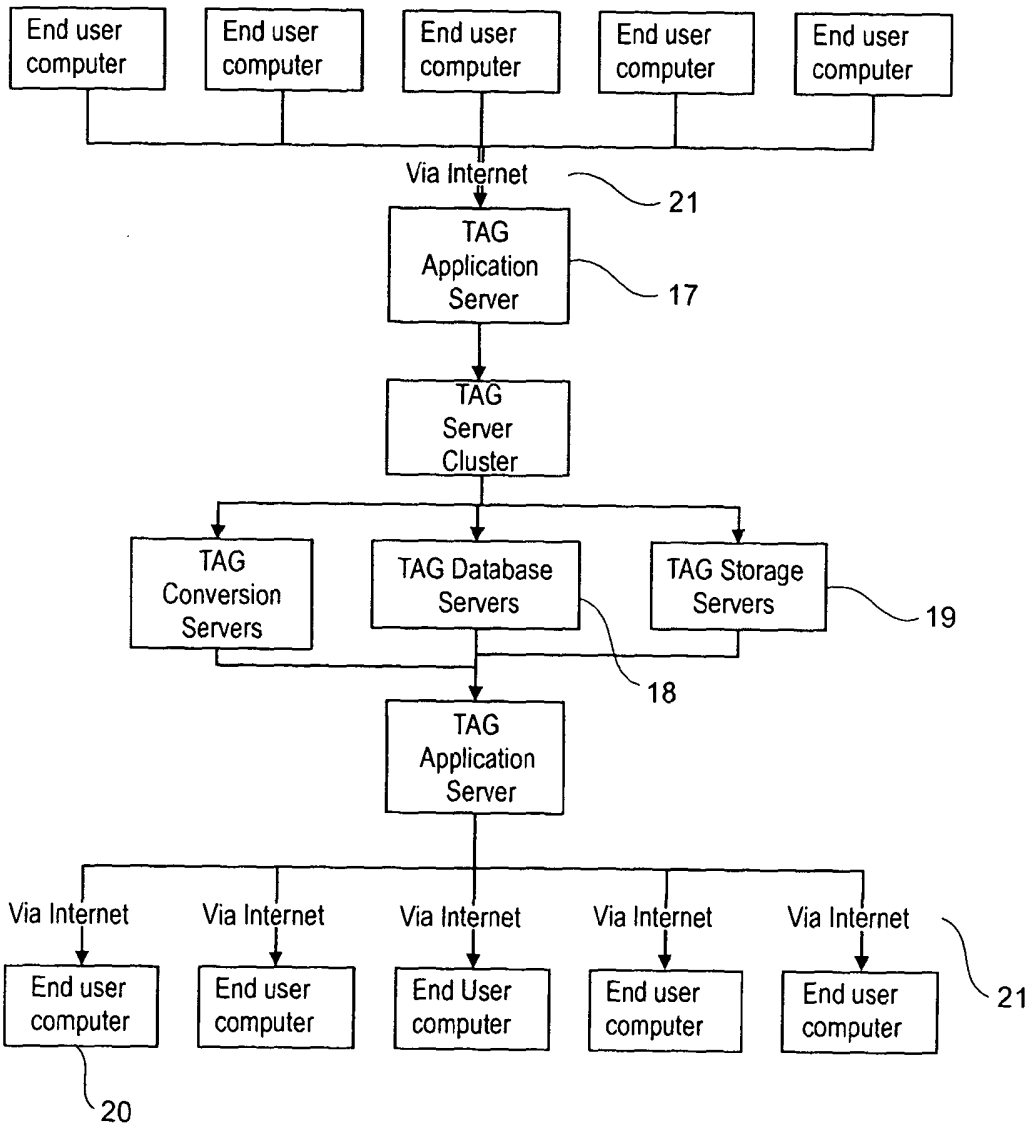

Fig. 11

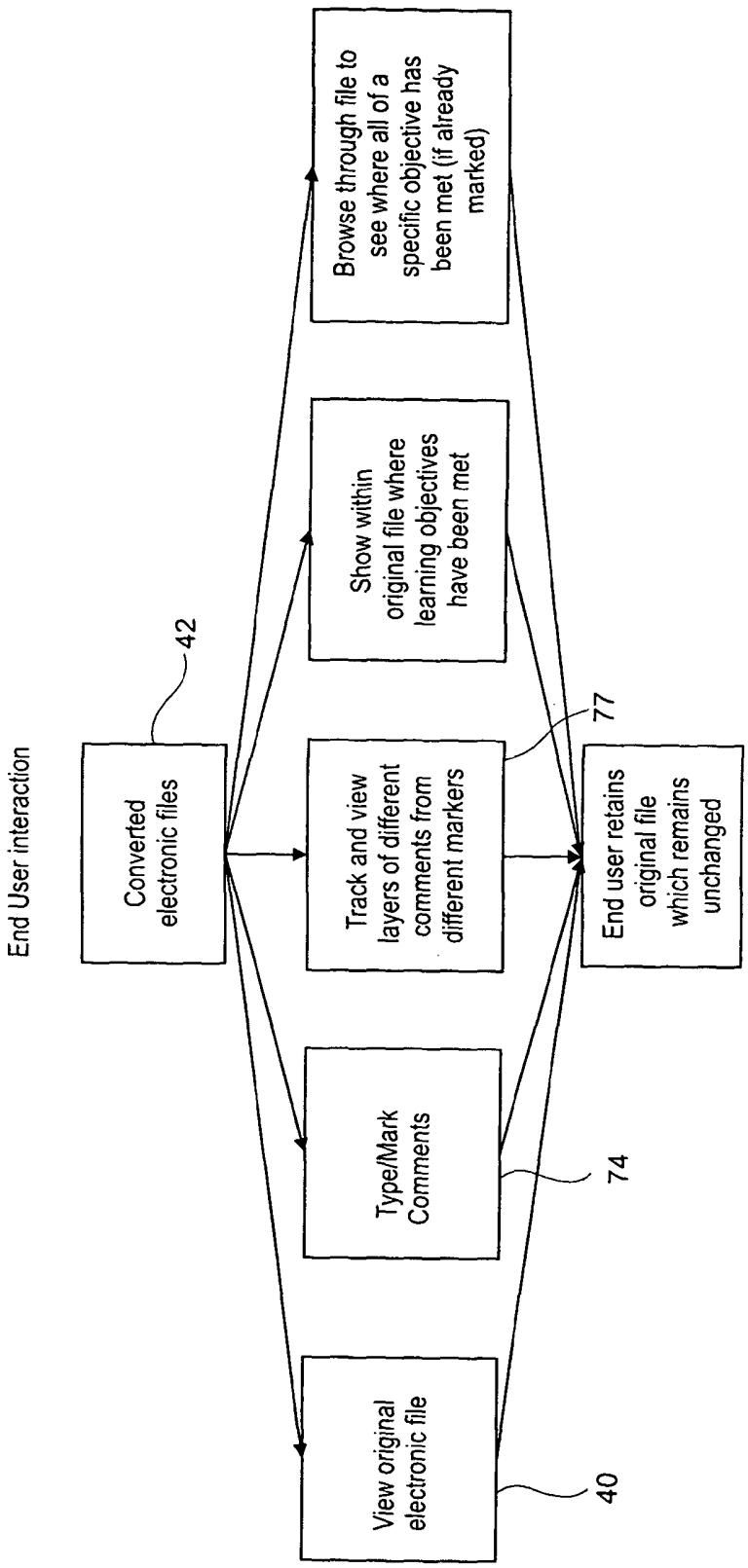
End User interaction
Converted electronic files
42
View original electronic file
40
Type/Mark Comments
74
Track and view layers of different comments from different markers
77
Show within original file where learning objectives have been met
Browse through file to see where all of a specific objective has been met (if already marked)
End user retains original file which remains unchanged

Fig. 12

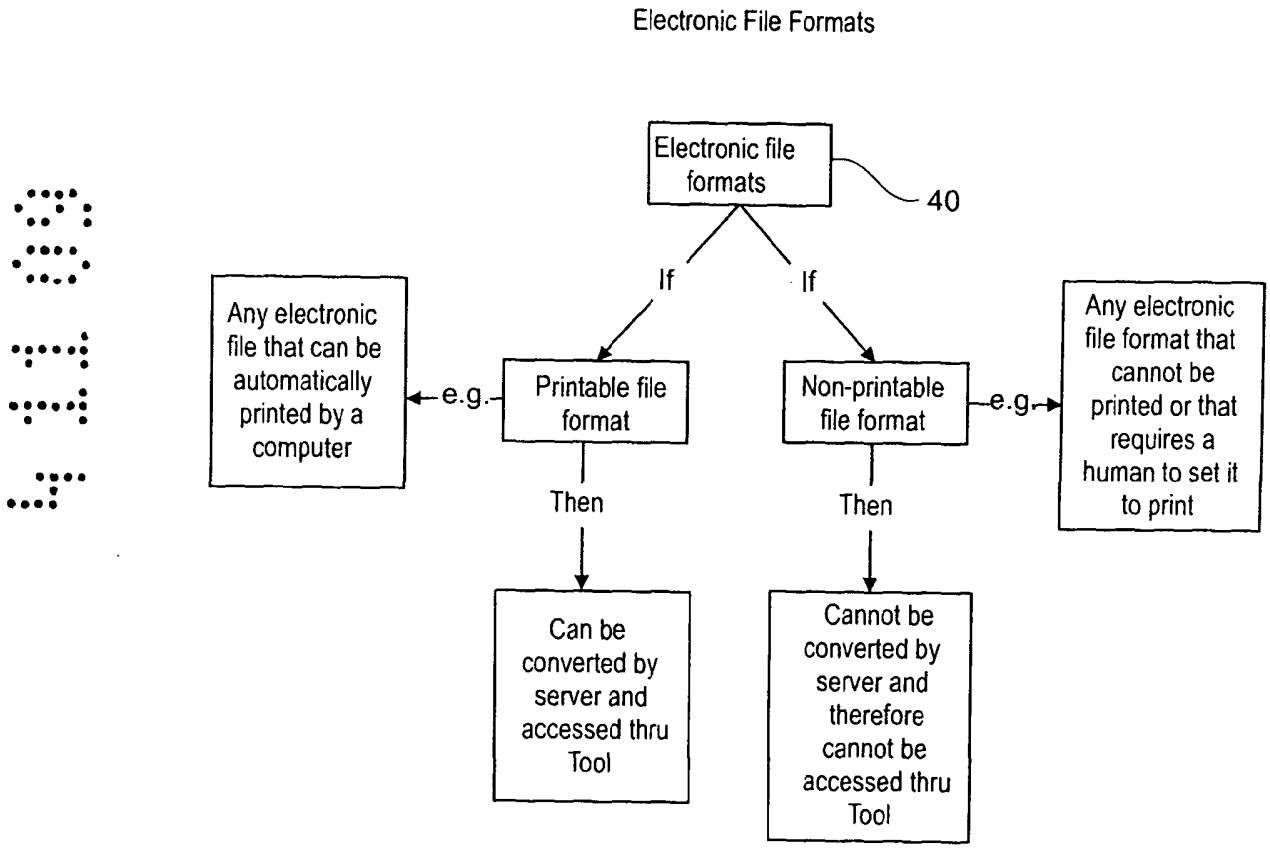
Electronic File Formats
Electronic file formats
40
If
If
Any electronic file that can be automatically printed by a computer
e.g.
Printable file format
Non-printable file format
e.g.
Any electronic file format that cannot be printed or that requires a human to set it to print
Then
Then
Can be converted by server and accessed thru Tool
Cannot be converted by server and therefore cannot be accessed thru Tool

Fig. 13

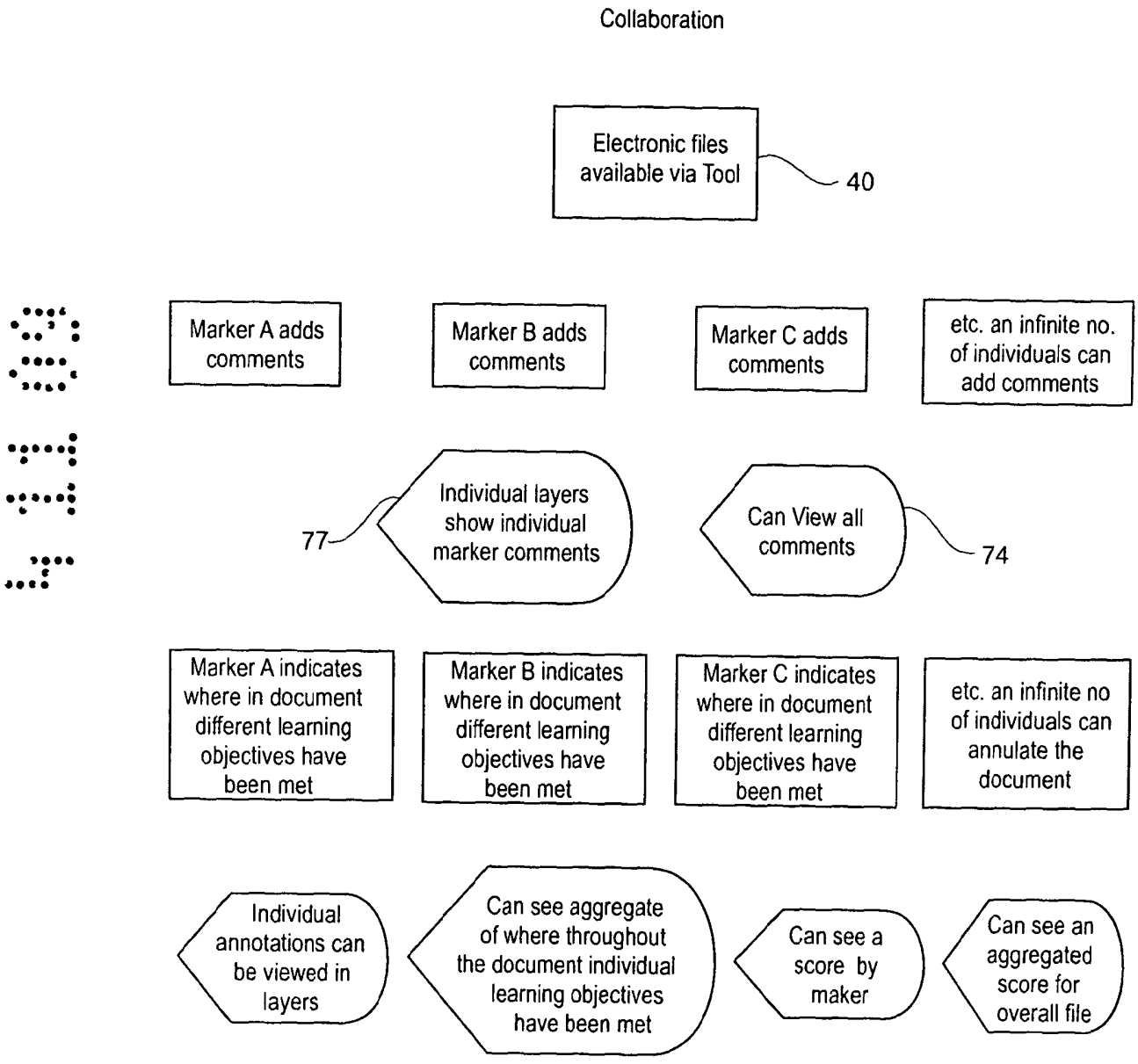
Collaboration
Electronic files available via Tool
40
Marker A adds comments
Marker B adds comments
Marker C adds comments
etc. an infinite no. of individuals can add comments
77
Individual layers show individual marker comments
Can View all comments
74
Marker A indicates where in document different learning objectives have been met
Marker B indicates where in document different learning objectives have been met
Marker C indicates where in document different learning objectives have been met
etc. an infinite no of individuals can annulate the document
Individual annotations can be viewed in layers
Can see aggregate of where throughout the document individual learning objectives have been met
Can see a score by maker
Can see an aggregated score for overall file

Fig. 14

METHOD FOR FACILITATING ASSESSMENT OF A COURSEWORK ANSWER AND MODERATING THE ASSESSMENT

The present invention relates to a method for facilitating assessment of a coursework answer and moderating the assessment.

Assessment of a coursework answer, such as homework or end of unit assessment work, has traditionally been carried out on paper. A coursework question would be given to the student. A coursework answer would be submitted by the student on paper. An assessor would assess the work and express this assessment by writing on the work in ink, traditionally red ink, indicating marks awarded and providing comments relating to how well the student has met the objectives of the coursework. Where a mark is awarded the assessor will ordinarily indicate this with a tick or a number associated with the number of marks warranted. The number of ticks or marks will be summed to give an overall mark for the coursework answer. The overall mark can then be compared to a chart to give an overall grade or compared to the other students' overall marks to give an overall grade.

A problem associated with this traditional method is that the coursework is inherently modified by the assessment, in that the coursework will have red ink written over much of the coursework; and errors are commonly made in the addition of the ticks or numbers in marking.

The coursework may be assessed by more than one assessor. This is particularly important for coursework which leads to a nationally recognised qualification, where the marking has to be provably unbiased, accurate and fully representative of the students' coursework answer. In this case, the coursework answer is

photocopied to produce a copy and the further assessor has the copy of the coursework answer which is assessed independently. The overall mark awarded by the assessor is compared to the mark awarded by the further assessor. *Inter alia*, if there is a large variation between these marks, the coursework with the assessments of the assessor and further assessor are sent to a moderator. The moderator will review the marks awarded by each of the assessors to moderate the assessments to provide a moderated mark. The moderator may also review a coursework answer which has been marked consistently by the assessor and further assessor(s) to check on the quality of the assessor and further assessor's assessments.

A problem with this traditional method of assessment is that photocopying coursework is time consuming, expensive and does not necessarily fully reflect the original coursework answer, particularly, but not exclusively, if the coursework involves multimedia digital video, photo and sound files.

Another problem with this traditional method of moderating the assessment is that it is difficult and time consuming, in that: errors are commonly made in the addition of the ticks or numbers; and it is often difficult to find evidence for the mark awarded.

A further problem is sharing the assessment for student review. The assessor may not be able to express his assessment clearly due to the lack of space on the coursework or due to fear of obscuring part of the original work. Thus the student may not fully appreciate the reason for the assessor's mark.

A further problem is sharing the assessment for student to student review (peer to peer review).

In the field of hand written examination paper answers, examination paper answer sheets submitted by candidates can be scanned and the scanned file can be used in a computer program package to facilitate assessment. For example, multiple choice answer papers can be marked by the computer program with very little or no assessor intervention.

Examination paper answer sheets which comprise candidates' textual and pictorial answers are generally not capable of being assessed by computer. However, these examination paper answer sheets may be scanned and sent electronically to the assessors. This has the advantage of reducing the amount of copying and posting of examination paper answer sheets to the assessors and, coupled with workflow management software, facilitates the assessors' workflow. It will be appreciated that examination paper answer sheets are all submitted in the same format, unlike coursework.

A student may answer a coursework question using a computer application program, such as Word™, Powerpoint™, Inspiration™ or Flowol™ . The coursework answer may be saved in a data file for that application and submitted to the assessor (i.e. handed in) in that form. Alternatively, a coursework answer may be printed and submitted on paper of various sizes. But in so doing, some of the benefit of using a computer to generate this coursework will be lost. A Powerpoint™ presentation, when printed out, loses all animation, sound, video and transitions that have been included. When a spreadsheet is printed, for example, it is impossible to see what, if any, formula have been used to calculate specific cells. A coursework answer may utilise any sort of recordable medium to record the coursework, such as on paper, or in

computer readable text files, drawing files, spreadsheet files, database files, video files, audio files etc. recorded on to a flash memory stick, a network drive, a local drive, a CD or DVD or the like. In the case of design and technology, art and some other coursework, the coursework answer may be submitted in three-dimensional form.

In accordance with the present invention, there is provided a method for facilitating assessment of a coursework answer, the method comprising the steps of displaying at least part of a representation of a coursework answer on a display, displaying a list of learning outcome statements, selecting a learning outcome statement from the list of learning outcome statements and placing the learning outcome statement on the representation of the coursework answer at a location evidencing fulfilment of the learning outcome statement. The learning outcome statement indicates that the assessor believes this part of the coursework answer evidences meeting the learning outcome, which may be regarded as an objective of the coursework question. Advantageously, the step of selecting a learning outcome statement from the list of learning outcome statements and placing the learning outcome statement on the representation of the coursework answer at a location evidencing fulfilment of the learning outcome statement, comprises dragging a learning outcome statement from the list of learning outcome statements and dropping the learning outcome statement on the representation of the coursework answer at a location evidencing fulfilment of the learning outcome statement. Preferably, the method is carried out by an assessor. The invention is also applicable to written examination papers.

Preferably, the learning outcome statement on the representation of the coursework answer is placed in a layer over the representation, the layer switchable to view the learning outcome statement and to hide the layer such that the representation is viewable without viewing the outcome statement. Advantageously, a symbol appears at the location evidencing fulfilment of the learning outcome. Preferably, a click on the symbol will open a textbox displaying the learning outcome statement.

Preferably, the method further comprising the step of selecting a learning outcome statement from the list of learning outcome statements, which locates the learning outcome statement on the representation of the coursework answer evidencing fulfilment of the leaning outcome statement and displays the part of the coursework answer which evidences fulfilment of the learning outcome.

Advantageously, an assessor icon is displayed the method further comprising the step of activating the assessor icon to reveal a list of assessors. Preferably, each assessor listed in the list of assessors has a colour associated therewith, the outcome statement placed on the representation of the coursework answer appearing in the colour.

Preferably, a note icon is displayed, the method further comprising the step of activating or dragging and dropping the note icon on to a specific point on the representation of the coursework answer and leaving a note. Advantageously, the note is wrapped into a box, the box openable when activated.

Preferably, a comment icon is displayed, the method further comprising the step of activating or dragging and dropping the comment icon on to a specific point on the

representation of the coursework answer and leaving a comment. Advantageously, the comment is wrapped into a box, the box openable when activated.

Preferably, a highlighter icon is displayed, the method further comprising the step of activating the highlighter icon on highlighting a specific area on the representation of the coursework answer.

Advantageously, the coursework answer is created in an application, the method further comprising the step of converting the coursework into a common electronic format to create a coursework file to allow the coursework answer to be read using a common reader to display the representation of the coursework answer. Alternatively or additionally, the coursework answer may be created on paper to create a paper answer, the method comprising the step of scanning the paper file into a computer. The step of creating the coursework answer may include printing the coursework answer from a computer or hand writing the answer. Preferably, scanning into a Flash readable format (.swf format) or converting a scanned file into a Flash readable file. A flash readable file generally has the file extension ".SWF". Preferably or alternatively, the common electronic format is a Flash readable file. Advantageously, the common electronic format is at least one of: TIFF; JPEG; Bitmap; and Adobe.

Preferably, the method further comprises the step of activating the coursework file to display the representation of the coursework answer and displaying a window requesting acceptance of the representation for submission, although most preferably, the coursework answer is converted to an ".swf" file, using a good converter or filter which does not alter the student's coursework answer, and thus the step of displaying the

representation of the coursework answer and displaying a window requesting acceptance of the representation for submission, is not necessary. Advantageously, the method further comprises the step of submitting the coursework answer to the assessor over the internet.

The present invention also provides a method for facilitating moderating an assessment, the method comprising the steps of displaying at least part of a representation of a coursework answer on a display, displaying a list of learning outcome statements, selecting a learning outcome statement from the list of learning outcome statements, which finds the learning outcome statement on the coursework answer evidencing fulfilment of the leaning outcome statement and displays the part of the coursework answer which evidences fulfilment of the learning outcome statement.

The present invention also provides a method for facilitating assessment of a coursework answer, the method comprising the step of converting the coursework into a common electronic format to create a coursework file to allow the coursework answer to be read using a common reader. This ensures that the integrity of the original file (which may include multimedia work comprising narrative essays, multimedia video, photo and sound files, drawing, databases and spreadsheets) will be maintained.

The present invention also provides a method for facilitating assessment of a coursework answer, the method comprising the step of displaying a representation of the coursework answer on a display and creating at least one layer over the representation, the at least one layer for having a learning outcome statement, mark or comment thereon.

A coursework question may be set using the assessment tool. Two of the resources are shown, each resource has its own icon; displaying a first and second resources for use by the student in answering the coursework question; displaying a list of objectives to be met by the student in producing a coursework answer; displaying a marking schedule for an assessor to use in assessing how well the coursework answer meets the objectives; first and second steps in operation of a workflow tool used to store and display information about the progress of preparation of the coursework answer; and displaying assessment outcomes for the coursework answer, as decided by the student and the assessor.

The present invention also provides a method for facilitating assessment of coursework, the method comprising the step of converting the coursework into a common electronic format to create a coursework file to allow the coursework answer to be read using a common reader. Preferably, the common electronic format is Flash readable. Advantageously, the common electronic format is at least one of: TIFF; JPEG; Bitmap; and Adobe.

Advantageously, the method further comprises the step of saving the coursework file in a databank. Preferably, the databank is accessible on the internet.

Preferably, the method further comprises the step of loading the coursework file into an assessment tool to enable an assessor to view the coursework file. Advantageously, the method comprises the step of creating a layer over the common electronic format, which layer allows assessment annotations to be applied thereto.

The present invention also relates to a method for facilitating assessment of coursework, the method comprising the step of displaying a representation of the

coursework answer and creating at least one layer over the representation, the at least one layer for having a mark or comment thereon.

The present invention also provides an assessment tool loadable on to a computer, the assessment tool carrying out the steps of the method of the invention.

The present invention also provides an assessment tool accessible via a computer from the internet, the assessment tool carrying out the steps of the method of the invention.

The present invention also provides a method for facilitating assessment of a coursework answer, the method comprising the step of displaying the coursework answer page by page within a viewing screen, displaying a list of learning outcome statements also on that screen, providing transparent layers over the coursework answer to allow assessors to drag and drop learning outcome statements onto the coursework answer to indicate where in the coursework answer a particular learning outcome has been evidenced. Each assessor will be given his/her own individual transparent layer in which to show where learning outcomes have been met within the coursework answer as well as allowing assessors to type in comments or notes. The original coursework answer remains unaffected.

For a better understanding of the present invention, reference will now be made, by way of example, to the accompanying drawings, in which:

Figure 1 is a screenshot from an assessment tool displaying a coursework question as viewed by a teacher in a method in accordance with the present invention;

Figure 2 is a screenshot of a first resource for use by the student in answering the coursework question shown in Figure 1;

Figure 3 is a screenshot of a second resource for use by the student in answering the coursework question shown in Figure 1;

Figure 4 is a screenshot of a list of learning outcomes to be met by the student in producing a coursework answer to the coursework question shown in Figure 1;

Figure 5 is a screenshot of a marking schedule for an assessor to use in assessing how well the coursework answer meets the learning outcomes listed in Figure 4;

Figure 6 is a screenshot of a first step in operation of a workflow tool used to store and display information concerning the status of the coursework answer, as seen by a teacher;

Figure 6A is a screenshot from the assessment tool displaying a coursework question as viewed by a student;

Figure 7 is a screenshot from the assessment tool shown in Figure 6A displaying a coursework answer to be submitted by a student;

Figure 7A is a screenshot of the assessment tool shown in Figure 1 when logged in as an assessor;

Figure 8 is a screenshot of learning outcomes for the coursework answer, the learning outcomes assessed by the student and by the assessor;

Figure 9 is a screenshot of a coursework answer being assessed, in accordance with the present invention;

Figure 10 is a flow diagram setting out some steps in a method in accordance with the present invention;

Figure 11 is a block diagram showing the arrangement of computers in a system in accordance with the present invention;

Figure 12 is a block diagram showing the steps that can be taken by a student or assessor in a method in accordance with the present invention;

Figure 13 is a flow diagram showing steps in coursework conversion; and

Figure 14 is a flow diagram showing steps in a method of moderating the assessment in accordance with the present invention.

Figure 1 shows a screenshot of an assessment tool, generally identified by reference numeral 100. The screenshot shows a view as seen by a teacher logged in to the assessment tool 100. The assessment tool 100 comprises a teacher's portfolio 1, in this case "Karim's portfolio". The assessment tool 100 displays a coursework question 2 to be assigned to a student, group of students or an entire class of students. The coursework question 2 is displayed in a window 3 entitled "About the Task". The coursework question 2 is displayed under a "tasks" tab 4. The coursework question 2 in this case relates to party planning, and includes: working out how much a party at school will cost; creating a theme for the party; what will be provided at the party etc. This is a Unit 5D, QCA Scheme of Work for Year 5 primary aged pupils. Six resources 5-10 are provided to facilitate the student answering the coursework question 2. A first resource 5 is shown in Figure 2 and a second resource 6

is shown in Figure 3. The first resource 5 is a link to a web page introducing Perfect Party Planners Plc and sets out some information for the student. The second resource 6 is a text file setting out more detailed information about the coursework question 2, including information about caterers, which are a fundamental part of party planning. The second resource 6 also provides a complete overview of what needs to be done for the particular coursework question, and sets overall objectives for the student.

Resource 7 is a spreadsheet file. Resources 8 to 10 are further text files.

The coursework question 2 can be set by the teacher directly using a task creation tool (not shown) and then displayed in the window 3 or selected from a number of coursework questions held in a task bank in the storage bank 19, Figure 11, the selected coursework question 2 displayed in the window 3. Each of the number of coursework questions held in the storage bank 19 includes an associated marking schedule, see Figure 5 and list of learning outcome statements 33, see Figure 4. The marking schedule may reflect the learning outcome statements and provide marks beside each outcome statement 83. There may be additional statements in the marking schedule, such as statements generic to all coursework questions in that subject, such as spelling, grammar, etc..

A teaching resource 11 is also provided. The teaching resource 11 is a document setting out information for the teacher setting, supervising or assessing the coursework question 2.

Other tabs are provided within the teacher's portfolio 1, which are: an "about me" tab 12, for storing and displaying the teacher's personal details such as

full name, home address; a "classes" tab 13 lists the teacher's classes, and a scrollable list of students in each class and timetable; a "messages" tab 14 provides a messaging service with students about the task and other teachers; a "workspace" tab 15 for facilitating creation of a coursework question; and a "log out" tab 16 for logging out of the teacher's portfolio 1.

The teacher's portfolio 1 is run within the assessment tool 100. The assessment tool 100 is run on an application server 17, and uses a database server 18 and a storage server 19 as shown in Figure 11. The application server 17 may be available to end users' computers 18 on an intranet or internet 21. The assessment tool 100 is available to subscribing end users on their computers 20 over the internet or intranet 21 through a web browser. The end users' computers 21 can be those of the student, teacher, assessor, moderator or a third party with access rights. The end users are able to access the assessment tool 100 on the application server 17 if they have appropriate access rights, which may include entering a password, finger print recognition, iris recognition or any other suitable form of access right.

Under the "tasks" tab 4, there is an "add resources" button 23, which when depressed enables the teacher to upload a resource, such as resources 5 to 10, to "resources for this task" section to the coursework question 2. There is also an "edit task" button 24 which when depressed unlocks the coursework question 2 to allow a teacher to edit the coursework question 2. There is also an "assign task" button 25 which when depressed allows the teacher to select students to assign the coursework question 2 to a student or more than one

student from a list of students 38, see Figure 6. There is also an "archive tasks" button 26 for saving the coursework question 2 in the storage server 18, so that the coursework question can be re-used or modified at a future date. There is also an "outcomes" button 32 for accessing a list of outcome statements 33, see Figure 4, which relate to the coursework question 2.

An "upload notes" button (not shown) allows the teacher to upload a teacher resource 11, which adds an icon to the teacher resource list 30.

A further button (not shown) allows the teacher to upload an image 28 displayed on a right hand side of the screenshot.

A learning outcomes screen 31, shown in Figure 4, is viewable by clicking on the "outcomes" button 32. The learning outcomes screen 31 displays a list of learning outcome statements 33 defined by the teacher. The learning outcome statements 33 set out the objectives of the coursework question 2. In this case, there are three outcome levels: Outcome 1 - Target Level 2; Outcome 2 - Target Level 3; and Outcome 3 - Target Level 4. The Target Levels are set out below. For each level to be reached, the student's answer must demonstrate each learning outcome statement 33 has been met.

Target Level 2:

- I can use a spreadsheet.
- I can fill data into a spreadsheet made by my teacher.
- I know about cells and naming them.
- I can talk about what the spreadsheet does.

Target Level 3:

- I can use a spreadsheet to work out sums.
- I can change data in spreadsheets to answer

questions.

- I can explain why I made changes to the spreadsheet.

Target Level 4:

- I designed a spreadsheet with calculations.
- I can use 'SUM' to add up a set of numbers.
- I can alter the calculations in a spreadsheet.
- I can tell you what will happen if I make changes to the spreadsheet.

When the teacher has depressed the "assign task" button 26, window 34, as shown in Figure 6 opens. The teacher assigns the coursework question 2 to a student or a number of students from the scrollable list of students 38 by checking a check box 39 next to each name to indicate that particular student has been assigned the coursework question 2. The teacher sets a start date 35 and a submission (hand-in) date 36. The teacher may assign the coursework question 1 to an individual student, a group of students, a whole class, or to a number of classes and includes a start date 35 and a hand-in date 36 for each individual student, group of students, whole class, or to a number of classes or any number of students of the group, whole class or number of classes.

Each student has his own portfolio 46, shown in Figure 6A and 7, which he logs in to. The student's portfolio 46 is generally similar to the teacher's portfolio 1, but without some of the functionality, such as the task creation tool or the buttons 23 to 26. The learning outcome statements 33 are viewable by the student. Resources 5 to 10 are visible and accessible to the student, but teacher resources 11 are not visible or accessible to the student. The student has additional

functionality. The student can view the list of learning outcome statements for the coursework question by clicking on "outcomes" button 46a. The student can leave a message for the teacher using "message teacher" button 46b, view messages left for the student using "view messages" button 46c, and upload files, such a finished coursework answer or a coursework answer in progress using "upload files" button 46d.

The student's portfolio 46 is shown in Figure 6A displaying a coursework question 2 assigned by a teacher to the student. Figure 7 shows a file 40a containing the student's coursework answer, which may be ready for submission or incomplete. When the student is ready to submit his file 40a final coursework answer, he will click on "hand-in" button 46e.

The student completes an answer to the coursework question 2 in an application, such as Word™, and saves the file 40 either locally onto his computer, or onto the network or onto a removable disk. When the student is ready to submit the coursework answer question 2, he will log in to the assessment tool 100, select the coursework question 2 for which the coursework answer relates, find the saved file 40a and select 'hand-in' 46e to submit his coursework answer. The submitted file 40 is saved directly into storage server 19 (Figure 11) accessible through the assessment tool 100. The student also retains a copy of this file on his computer, network or removable disk drive. When the submitted file 40 is saved into the storage server 19, the submitted file 40 is scanned and virus checked before the submitted file 40 becomes available within the assessment tool 100. The assessment tool 100 also carries out a step of converting the file 40 to a common electronic format, such as using a Flash

converter to place the submitted file in a Flash readable file 42, Figure 12. The student can then view the Flash readable file 42 is then saved into the databank 41. The Flash readable file 42 may be viewed by the student in a Flash reader. The Flash readable file 42 may then be regarded as the definitive file for assessment purposes or an alternative to the format submitted by the student.

If the student completes his coursework answer on paper, the paper answer may be scanned and submitted through the assessment tool 100, which automatically carries out the step of converting the file Flash readable file using the Flash converter.

When the teacher logs into the assessment tool, he is alerted that a coursework answer has been submitted. The teacher navigates to the coursework answer in the teacher's environment 45 and clicks on the name of the student from the scrollable list of students 38 to reveal the student's portfolio 46, in this case, Gareth's portfolio as viewed within the teacher's environment 45 shown in Figure 7. Gareth's answer is viewable by clicking on the Flash readable file link 43 shown in the "My Work" window 44. An "About the Task" window 47 displays the coursework question 2; resources 5 to 10 are shown therebelow; and teaching resource 30 is shown therebelow. A summary window 48 is provided on the right hand side of the screenshot, below image 28. The summary includes a status 49 of the answer: completed; in progress; or marked. The hand-in date 36; the name of the teacher 50 who assigned the coursework question 2; class number 51, in this case class 8-5AL; subject 52, in this case Information and Communication Technology (ICT).

From this screen in the teacher's environment 45, teachers have access to their student's portfolio. The

teacher can send that student additional resources if necessary using an "upload file" button 53. The teacher can view the history of messages between themselves and that student about that particular coursework question 2 using "view message" button 54. The teacher can view any participation that student has had within a discussion forum for that particular task by pressing button 55. The teacher can view the list of learning outcomes 33 by pressing button 56. This student's portfolio 46 can be included in a moderator's portfolio (not shown) or adding a note for a moderator by clicking on the "moderation note" button 57. The teacher can also send the coursework answer 40 back to the student for further work by clicking on the "re-open" button 57a and/or send him a message using the "message student" button 58.

When the teacher is ready to assess Gareth's answer, the teacher clicks on the Flash readable file link 43 entitled ""Red Pen Mark?", which opens the Flash readable file 42 as the student's answer 59 in a window 60 of a tool referred to by the applicant as "Red Pen Tool™" 61. Typically, the Flash readable file 42 will comprise a number of standard size pages of text, charts, graphs and images. The standard size page may typically be A4 or A3. The Flash readable file 42 is typically displayed a page at a time or part of a page of the student's answer 59. The student's answer 59 can be paged through using arrow keys 62 and zoom in and out using magnifying glass icons 63. A list 64 of outcome statements 33 appears beneath window 60. The outcome statements 33 reflect the learning outcome statements 33 listed in Figures 4 and 8. When marking the coursework answer 59 each of these learning outcome statements 33 can be dragged and dropped on the student's answer 59 onto the precise incidents within the

coursework answer 59 where the student has met that learning outcome 33. A placeholder 65 appears where each learning outcome statement 33 has been dropped.

The teacher can immediately begin marking, commenting on or annotating the work and a layer for that specific teacher is automatically created. For this particular task, only one teacher/assessor has marked the work, and that is Andrew Campbell whose marks, notes and comments are shown in blue. If more teachers or assessors had marked this piece of student coursework, then those "layers" icon 66 on a top tool bar 67, which reveals a pull down list of assessors 68. Each assessor 69 has an associated colour. The teacher selects his name, in this case Andrew Campbell, blue. The teacher reads the student's answer and selects an appropriate outcome statement 33 from list 64 where a learning outcome statement has been met, and drags and drops the appropriate outcome statement 33 on to the evidence in the student's work to identify the evidence on to transparent or invisible layer 77 over the coursework answer 59. The transparent layer 77 is unique to Andrew Campbell. The placeholder 65 will be coloured blue. The list 64 remains a complete list of all outcome statements. The list does not deplete with each use of an outcome statement. Once used, the outcome statement 33 may change colour, indicating to the teacher or moderator, that the student's answer 59 incorporates matter which satisfies that particular outcome statement 33.

The teacher can also drag and drop a note box 70 from note icon 72 on to specific points on the student's answer 59, which are identified by a thumbtack 71. The note box 70 is sizeable to allow text to be wrapped

therein, and reveals itself when the cursor (not shown) is moved over the thumbtack 71. Any number of note boxes 70 can be added to the student's answer 59. The note boxes 70 can contain a significant amount of text.

The teacher is also able to grade the answer or part of the answer based upon the mark scheme established for that particular coursework question. If the task is created by the teacher, then the teacher may pick from a number of marking schedules, including a simple Pass/Fail, 1 - 100, Grades A - G, and H – V. If the task relates to a general or vocational qualification, the mark scheme will be dictated by the examination awarding authority.

Grade 73 are dragged and dropped on to a specific point on the coursework answer 59. Any number of grades 73 can be added to the student's answer 59. The assessor uses a marking schedule 82. The marking schedule 82 may comprises a list of assessment criteria 83 and associated list of lower marks 84 and list of higher marks 85 (the example in Figure 5 is from a GCE qualification).

The teacher is also able to add a comment by dragging and dropping a comment icon 74. The comment icon 74 allows text to be added to the answer. Any number of comments can be added to the student's answer 59. The comment icon allows a small amount of text to be placed on the transparent layer 77 on the coursework answer 59, and is permanently visible when the layer 77 is selected.

The teacher is also able to highlight words or any part of the student's answer 59 by dragging and dropping a highlighter icon 75. Any number of highlighted areas (see the Theme of Super Heroes which is highlighted on Figure 9) can be added to the student's answer 59.

The edit mode icon 76 will be highlighted when the teacher is in the process of doing anything other than viewing the Flash readable file. This edit mode allows the teacher to delete any of his own notes 70, comments or any of the learning objective statements 33 that he has added to his layer 77.

It should be noted that all of the learning outcome statements, comments, grades and note boxes appear in the colour blue to be consistent with Andrew Cambell's associated colour on his transparent layer 77 over the student's answer 59. Andrew Campbell's learning outcome statements placeholders, comments, grades and note boxes 70 form his assessment. The assessment is placed over the student's answer 59 in or on the transparent layer 77. The transparent layer 77 may be switched off, such that the student's answer will be fully visible without being obscured by the assessment.

A second teacher may assess the student's answer independently. The second teacher's name (not shown) would appear within the drop down list 68 and his associated colour would be distinct from blue, such as red. Learning outcome statements, comments, grades and note boxes will appear in the colour red on his separate transparent layer over the student's answer 59. The assessment is placed over the student's answer 59 in a layer which may be switched off, such that the student's answer will be fully visible without being obscured by the assessment. He may also switch off or on Andrew Campbell's transparent layer 77 with his associated learning outcome statements, comments, grades and note boxes which form Andrew Campbell's assessment.

Both assessments may be displayed simultaneously.

If the teacher would like to review the student's

answer 59, for example, to see the evidence in the student's answer 59 which the teacher deems fulfils the learning outcome statement 33, then the teacher simply double clicks on the learning outcome statement 33 from the list 64. Each instance in the student's answer 59 where he (or another teacher or assessor, provided all layers are switched on to be visible) has indicated that particular learning objective 33 has been met, will then automatically appear in the Flash viewer screen will then automatically. If the learning outcome statement 33 is used more than once in assessing the student's answer 59, the teacher or moderator double clicks on the outcome statement 33 again. A placeholder (not shown) identifies the part of the student's answer 59 satisfying the learning outcome statement 33 is displayed in window 60.

The teacher will save the assessment by pressing the disk icon 78 as an assessed file. The assessed file will be available to the student via the Red Pen Tool within that student's portfolio within the assessment tool 100.

A final assessment page, shown in Figure 8 may also be used by the student and teacher to confirm that all of the learning outcome statements 33 have been met. The final assessment page shows the learning objectives 33, each having a tick box 80, which allows the student to indicate if he believes his answer 59 meets the learning outcome statements 33. The student is often asked to assess their work against the learning outcome statements to help ensure the student has understood the coursework question and has answered all parts sufficient to meet the learning outcome statements 33. A further tick box 81 is provided for the teacher or moderator to fill in if the teacher or moderator believes the learning statement 33 has been met in the student's answer 59. The further

tick box 81 will be filled in automatically if the corresponding learning outcome 33 has been dragged and dropped on to the student's answer 59. Any comments made on the student's answer 59, may also be displayed on the final assessment page.

The teacher or moderator may also open the original file 40, which will require the application or a special reader for opening the type of file the student submitted the file in, for example Word™, Excel™, Flowol™, etc..

If appropriate (deemed so either by the teacher or the examination awarding authority), a peer of the student may also assess the coursework answer in the same fashion a teacher can. The peer would be added to the list of assessors 68 and add his assessment on have a further layer in a further colour to differentiate his assessment from the other assessors.

The Red Pen tool™ 61 may be used as a stand alone tool, and in this stand alone version, users will be able to create coursework questions and set learning objectives for these questions, and then 'assign' these questions to a number of individuals that they choose (in a similar fashion to what is available within the assessment tool 100). For the purpose of this stand alone tool example, we will continue to talk about teachers and students.

It is envisaged that the stand alone version of the Red Pen Tool will be available as a web based tool on a domain name, such as www.redpentool.com, where users can pay by credit card to access the Red Pen Tool in order to 'mark' a set number of files. Once the user has successfully had their credit card verified and paid for whatever number of files that they want to assess, then the user will be able to set up a user name and password

and have access to their own Red Pen Tool area where they will have certain administrative rights, including to: create their own coursework question - which will automatically generate a unique url that will be emailed to students and which they can determine whether is password protected or not. The user must then include a list of the email recipients who he would like to receive this unique url. The user will be able to establish the learning objectives for this task and set a hand in date. The user will be able to determine how this coursework question will be marked using the preset scales or a cumulative numeric scoring mechanism.

Figure 10 shows the process of how files are received and processed by the Red Pen Tool. After logging in, setting up and assigning the task, individuals invited by the paying user will be able to directly 'hand in' their work via the unique url that they are supplied. Handing in work in this way simply takes a copy of the original file which is then scanned and virus checked and saved onto the storage server. These invited individuals (students, in this example) will be able to upload a copy of the original file(s) containing their completed work for the assigned task using a wizard within the tool (at the url that they are provided). Once a copy of the original files are uploaded, they will be saved onto our storage server 19. Any files that have been uploaded into the tool are queued in a queue 91 and then go through the Flash conversion process 92 which will be automated on a server. The assessor will log back in and will have access to these Flash readable files 93 through a viewer and assess the coursework answers in the way as described with reference to Figure 9.

The user will pay a fee for a set number of files he wishes to assess, for example, for a number of files that will be converted and made available via the Red Pen Tool for assessment, The assessed and/or moderated file would then be available for the student to view within the Red Pen Tool™ 61.

If the assessment of the coursework answer includes a numeric mark, then a cumulative score will automatically be returned once the user completes and saves his marking, such as the marking schedule 82.

The student will be notified by email that they can also revisit the unique url to see their assessed coursework answer.

The learning outcome statements may be measured against National Curriculum level targets (and the language is either pulled by teachers directly from the National Curriculum, or rewritten, with teachers and advisors, in pupil-friendly language) or are set by an Awarding Body for general or vocational qualifications. Students have complete access to these learning outcome statements so that they know what their teacher is expecting of them.

CLAIMS

1. A method for facilitating assessment of a coursework answer, the method comprising the steps of displaying at least part of a representation of a coursework answer on a display of a computer, displaying a list of learning outcome statements, selecting a learning outcome statement from the list of learning outcome statements and placing the learning outcome statement on the representation of the coursework answer at a location evidencing fulfilment of the learning outcome statement.

2. A method in accordance with Claim 1, wherein the learning outcome statement on the representation of the coursework answer is placed in a layer over said representation, said layer switchable to view said learning outcome statement and to hide said layer such that the representation is viewable without viewing said outcome statement.

3. A method in accordance with Claim 1 or 2, wherein a symbol appears at said location evidencing fulfilment of the learning outcome.

4. A method in accordance with Claim 1, 2 or 3, the method further comprising the step of selecting a learning outcome statement from the list of learning outcome statements, which locates the learning outcome statement on the representation of the coursework answer evidencing fulfilment of the leaning outcome statement and displays the part of the coursework answer which evidences fulfilment of the learning outcome.

5. A method in accordance with any preceding claim, wherein an assessor icon is displayed the method further comprising the step of activating the assessor icon to reveal a list of assessors.

6. A method in accordance with Claim 5, wherein each

assessor listed in said list of assessors has a colour associated therewith, the outcome statement placed on the representation of the coursework answer appearing in said colour.

7. A method in accordance with any preceding claim, wherein a note icon is displayed, the method further comprising the step of activating or dragging and dropping the note icon on to a specific point on the representation of the coursework answer and leaving a note.

8. A method in accordance with Claim 7, wherein the note is wrapped into a box, said box openable when activated.

9. A method in accordance with any preceding claim, wherein a comment icon is displayed, the method further comprising the step of activating or dragging and dropping the comment icon on to a specific point on the representation of the coursework answer and leaving a comment.

10. A method in accordance with Claim 9, wherein the comment is wrapped into a box, said box openable when activated.

11. A method in accordance with any preceding claim, wherein a highlighter icon is displayed, the method further comprising the step of activating the highlighter icon on highlighting a specific area on the representation of the coursework answer.

12. A method in accordance with any preceding claim, wherein said coursework answer is created in an application, the method further comprising the step of converting the coursework into a common electronic format to create a coursework file to allow the coursework answer to be read using a common reader to display said

representation of the coursework answer.

13. A method in accordance with Claim 11, wherein said common electronic format is a Flash readable file.

14. A method in accordance with Claim 12 or 13, the method further comprising the step of activating said coursework file to display said representation of the coursework answer and displaying a window requesting acceptance of said representation for submission.

15. A method for facilitating moderating an assessment, the method comprising the steps of displaying at least part of a representation of a coursework answer on a display of a computer, displaying a list of learning outcome statements, selecting a learning outcome statement from said list of learning outcome statements, which finds the learning outcome statement on the coursework answer evidencing fulfilment of the leaning outcome statement and displays the part of the coursework answer which evidences fulfilment of the learning outcome statement.

16. A method for facilitating assessment of a coursework answer, the method comprising the step of converting the coursework answer into a common electronic format on a computer to create a coursework file to allow the coursework answer to be read using a common reader.

17. A method for facilitating assessment of a coursework answer, the method comprising the step of displaying a representation of the coursework answer on a display of a computer and creating at least one layer over the representation, the at least one layer for having a learning outcome statement, mark or comment thereon.

18. An assessment tool loadable on to a computer, the assessment tool carrying out the steps of the method as set out in any preceding claim.

Application No: GB0814707.6 **Examiner:** Mr Mark Sexton

Claims searched: 1-15 **Date of search:** 18 November 2008

Patents Act 1977: Search Report under Section 17

Documents considered to be relevant:

Category	Relevant to claims	Identity of document and passage or figure of particular relevance
X	1-15	EP 1585086 A1 (UNIV MADRID) - see whole document, noting the figures
X	1-15	EP 1672529 A2 (PALO ALTO) - see whole document, noting paragraph 27
X	1-15	WO 01/90928 A1 (GOREADER) - see whole document
X	1-15	WO 98/43223 A1 (EDUCATIONAL TESTING SERVICE) - see whole document, noting references to pre-defined feedback
X	1-15	JP 2002055593 A (DAINIPPON) - see WPI abstract accession no.02-356718/39
X	1-15	Premark: A system designed to organising course work for assessment http://www.iceg.net/2007/books/2/25_324_2.pdf - JAYAL, CARTRIGHT, SHEPPARD
X	1-15	HyLighter: An effective interactive annotation innovation for distance eductaion -2005 http://www.uwex.edu/disted/conference/Resource_library/proceedings/04_1344.pdf - LEBOW and LICK

Categories:

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

Field of Search:

Search of GB, EP, WO & US patent documents classified in the following areas of the UKC^{X} :

Worldwide search of patent documents classified in the following areas of the IPC

G06F; G09B

The following online and other databases have been used in the preparation of this search report

Online:WPI,EPODOC; Internet:Google

International Classification:

Subclass	Subgroup	Valid From
G09B	0007/00	01/01/2006
G06F	0017/24	01/01/2006