



Active video watching space (AVW-Space)

Instructor Manual

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INTRODUCTION

Presentation skills and other transferable (soft) skills are highly sought by employers and widely deemed to be crucial for employability in the knowledge economy [1-8].

Such skills are difficult to teach in technical or business tertiary courses, due to their resource-intensive nature [9]. The learner needs to practise under various conditions, receive feedback, reflect on it and do more practice. Teachers do not have enough resources to provide such support to each individual student.

Videos have become the main means for content production and consumption for the millennials and iGeneration. Video-based learning [10,11] is used in a wide spectrum of instructional settings, ranging from flipped classrooms [12], online learning and MOOCs [13-15] to informal learning using YouTube.

Videos can be a powerful method for soft skills [16-18], where learning requires contextualisation in personal experience and ability to see different perspectives.

Although videos are a highly popular digital medium for learning, video watching can be a passive activity and results in limited learning [13-20]. It is therefore necessary to provide support for active video learning.

Our approach is to support engagement during video watching via interactive notetaking, tapping into learners' familiarity with commenting on videos in social networking sites.

We have developed the Active Video Watching (AVW-Space) system aimed at soft skills training.

AVW-Space

AVW-Space is a controlled video-watching environment designed for self-study that resembles informal learning with popular social environments, such as YouTube.

It can be customised by the teacher who defines a set of *aspects* that serve as scaffolds for learning with the selected videos. The choice of aspects should direct the student's attention on skill-related concepts and foster reflection.

Learning in AVW-Space consists of two phases.

In **Phase 1**, students watch and comment on videos individually, using aspects to tag their comments made anytime during the viewing. AVW-Space shows time-stamped comments (i.e. the time elapsed from the start of video). The student can watch the video multiple times, including rewinding or skipping parts of the video.

At the beginning of **Phase 2**, the teacher needs to review comments and approve comments for sharing. Anonymised comments are then available to the whole class. Students can browse and rate comments made by others. The students can sort the comments by timestamp or aspect, so that they can position their own comments amongst the others. The options for rating are predefined by the teacher to promote deeper reflections. In addition to reading/rating the comments, the students can watch the part of the video that associates with a comment.

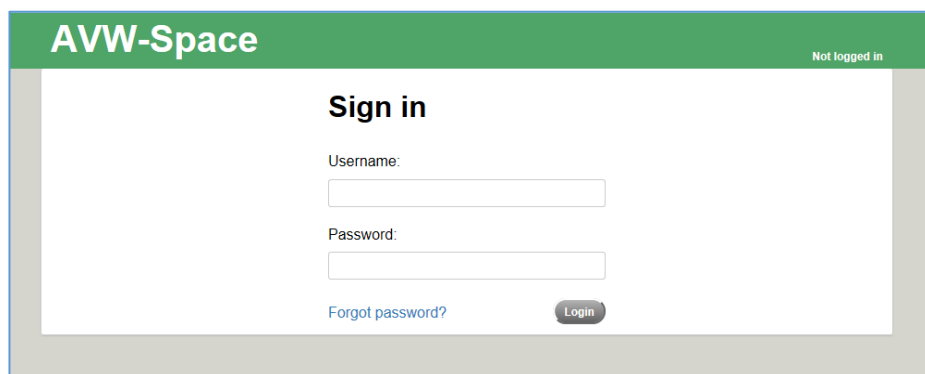
AVW-Space is a general-purpose online platform for soft-skills training. In our project, we focused on presentation skills. All explanations of how to use AVW-Space are given in the context of the Presentation Skills space.

Logging into AVW-Space

AVW-Space is available online at <http://ictg.cosc.canterbury.ac.nz:8007/login>

Please email Prof Mitrovic (tanja.mitrovic@canterbury.ac.nz) to get a teacher account.

The login screen is shown below.

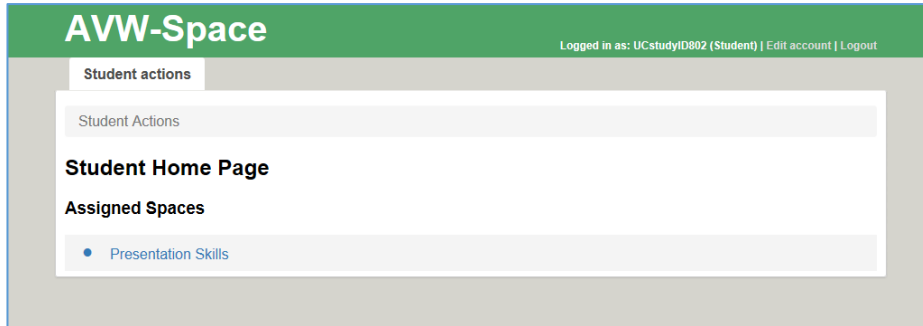


The screenshot shows the AVW-Space login interface. At the top, there is a green header bar with the text "AVW-Space" on the left and "Not logged in" on the right. Below the header, the main content area is titled "Sign in". It contains two input fields: "Username:" followed by a text box, and "Password:" followed by a text box. Below the password field, there is a blue link that says "Forgot password?" and a grey button labeled "Login".

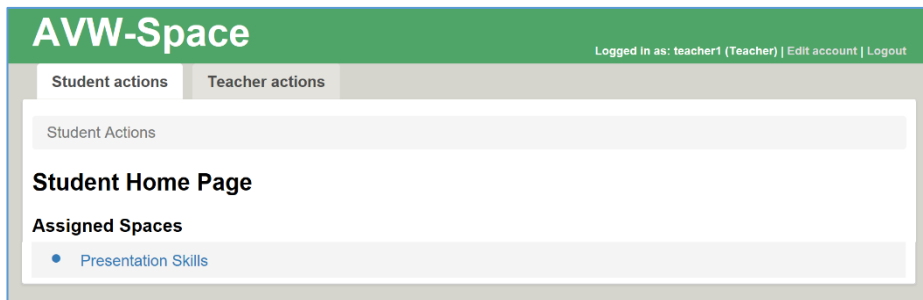
After entering the Username and Password, AVW-Space shows the list of available spaces.

Types of accounts in AVW-Space

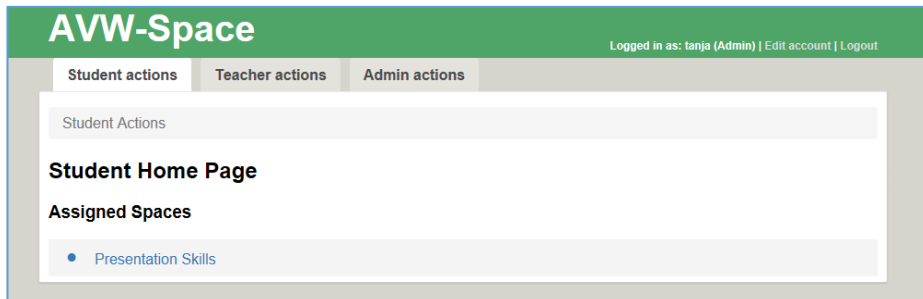
There are three types of accounts in AVW-Space: teacher, student and admin. If a user has a student account, the initial screen would look like this:



The screenshot below shows AVW-Space when a teacher logs in. The teacher can access to both the Student actions and Teacher actions tab.

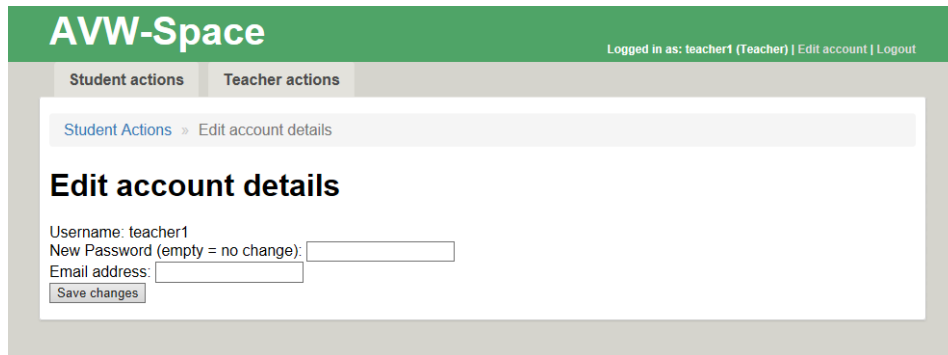


The administrator account has the highest privileges, and has access to both student/teacher actions plus additional actions which can be performed only by administrators. The screenshot below shows the initial screen of AVW-Space for an administrator.



Editing your account

To modify the details of your account, click the edit account link at the top right of your home page. The resulting page allows you to change your password, and modify the email address.



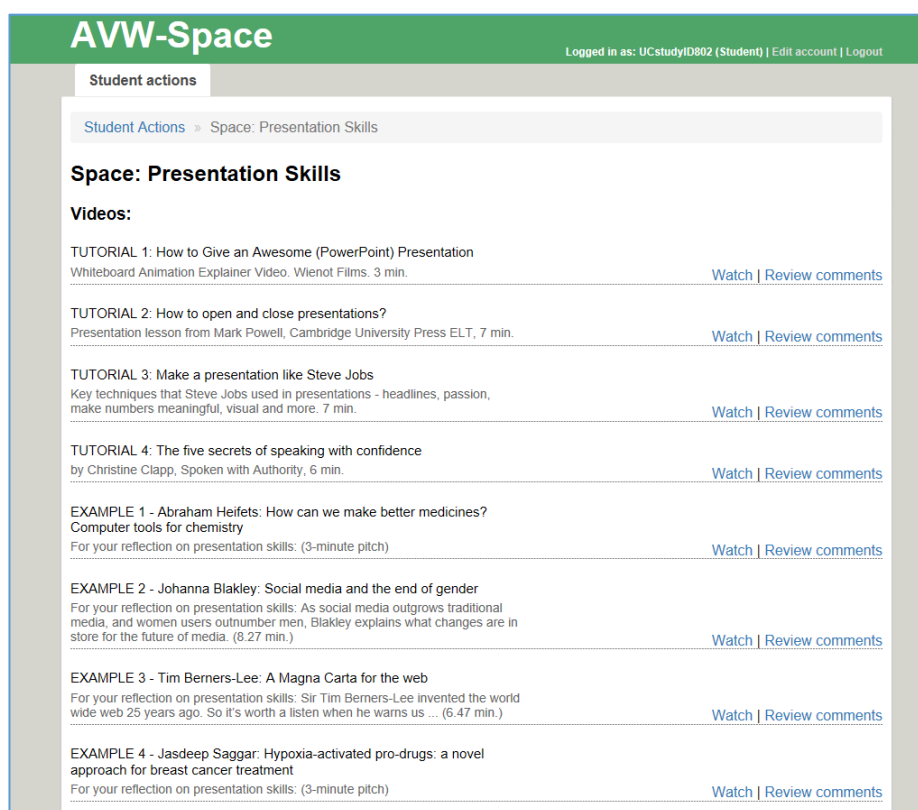
The screenshot shows the AVW-Space interface. At the top, there is a green header with the text "AVW-Space" on the left and "Logged in as: teacher1 (Teacher) | Edit account | Logout" on the right. Below the header, there are two tabs: "Student actions" and "Teacher actions". The "Student actions" tab is active, and within it, the "Edit account details" page is displayed. The page title is "Edit account details". Below the title, the current username is shown as "teacher1". There are three input fields: "New Password (empty = no change):", "Email address:", and a "Save changes" button.

In the following sections, we describe the actions that students can take in AVW-Space, followed by a description of teacher actions.

STUDENT ACTIONS

A student has access to spaces he/she is associated with. In the screenshot above, there is only one space available to the student. The *Presentation Skills* space is the space we have used in the study performed in this project.

Once the student clicks on the space name, the following screen is displayed.



The screenshot shows the AVW-Space interface. At the top, it says "AVW-Space" and "Logged in as: UCstudyID802 (Student) | Edit account | Logout". Below this, there is a "Student actions" tab. The main content area is titled "Space: Presentation Skills". Underneath, there is a "Videos:" section. The list of videos includes:

- TUTORIAL 1: How to Give an Awesome (PowerPoint) Presentation**
Whiteboard Animation Explainer Video. Wienot Films. 3 min. [Watch](#) | [Review comments](#)
- TUTORIAL 2: How to open and close presentations?**
Presentation lesson from Mark Powell, Cambridge University Press ELT, 7 min. [Watch](#) | [Review comments](#)
- TUTORIAL 3: Make a presentation like Steve Jobs**
Key techniques that Steve Jobs used in presentations - headlines, passion, make numbers meaningful, visual and more. 7 min. [Watch](#) | [Review comments](#)
- TUTORIAL 4: The five secrets of speaking with confidence**
by Christine Clapp, Spoken with Authority, 6 min. [Watch](#) | [Review comments](#)
- EXAMPLE 1 - Abraham Heifets: How can we make better medicines? Computer tools for chemistry**
For your reflection on presentation skills: (3-minute pitch) [Watch](#) | [Review comments](#)
- EXAMPLE 2 - Johanna Blakley: Social media and the end of gender**
For your reflection on presentation skills: As social media outgrows traditional media, and women users outnumber men, Blakley explains what changes are in store for the future of media. (8.27 min.) [Watch](#) | [Review comments](#)
- EXAMPLE 3 - Tim Berners-Lee: A Magna Carta for the web**
For your reflection on presentation skills: Sir Tim Berners-Lee invented the world wide web 25 years ago. So it's worth a listen when he warns us ... (6.47 min.) [Watch](#) | [Review comments](#)
- EXAMPLE 4 - Jasdeep Saggat: Hypoxia-activated pro-drugs: a novel approach for breast cancer treatment**
For your reflection on presentation skills: (3-minute pitch) [Watch](#) | [Review comments](#)

The student can see all the videos included in the space. In the Presentation Skills space, there are four tutorials, and four example videos. We have selected all videos from YouTube. The tutorials instruct students how to give presentations, while for example videos, the students are asked to comment on their quality. The title and additional information is shown for each video. On the right hand side, there are two links, for watching and reviewing comments. Please note that in Phase 1, only the Watch link is shown. The Review comments link appears only when the teacher approves comments to be shown to the class.

When a student selects the video he/she wants to watch, the following screen is shown:

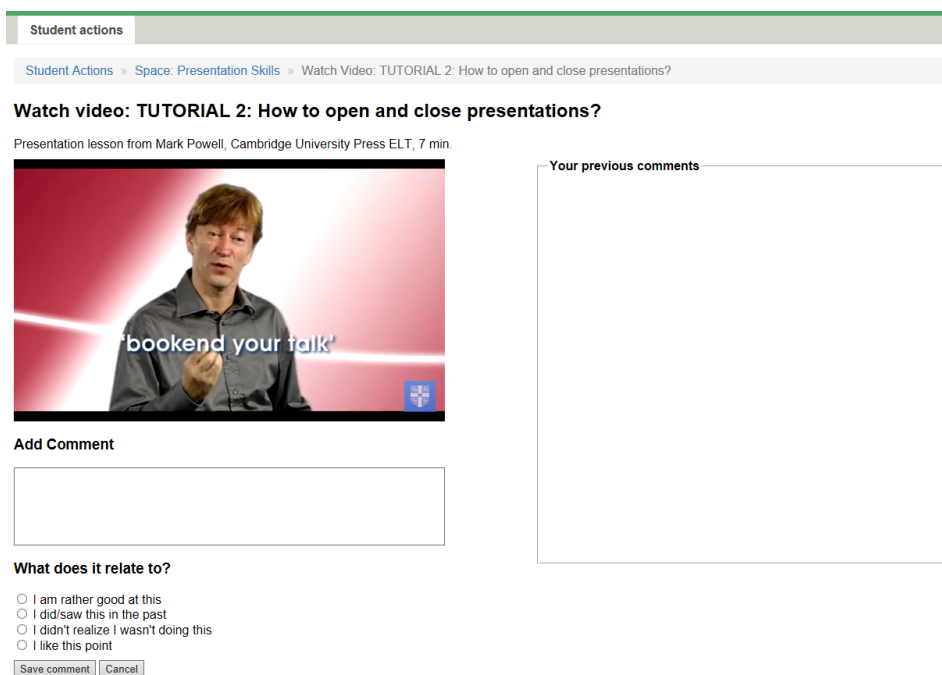
The screenshot shows the AVW-Space interface. At the top, there is a green header with the text "AVW-Space" and "Logged in as: UCstudyID802 (Student) | Edit account | Logout". Below the header is a navigation bar with "Student actions" and a breadcrumb trail: "Student Actions > Space: Presentation Skills > Watch Video: TUTORIAL 4: The five secrets of speaking with confidence". The main content area features the video title "Watch video: TUTORIAL 4: The five secrets of speaking with confidence" and the author "by Christine Clapp, Spoken with Authority, 6 min.". A video player is embedded, showing a woman speaking in a courtroom setting. The video title "The five secrets of speaking with confidence" is overlaid on the video. Below the video player is an "Add comment" button. To the right of the video player is a text area labeled "Your previous comments".

AVW-Space contains standard controls for playing the video, rewinding, stopping or fast-forwarding. Students can watch videos as many times as they wish.

The screenshot shows the AVW-Space interface. At the top, there is a green header with the text "AVW-Space" and "Logged in as: UCstudyID802 (Student) | Edit account | Logout". Below the header is a navigation bar with "Student actions" and a breadcrumb trail: "Student Actions > Space: Presentation Skills > Watch Video: EXAMPLE 3 - Tim Berners-Lee: A Magna Carta for the web". The main content area features the video title "Watch video: EXAMPLE 3 - Tim Berners-Lee: A Magna Carta for the web" and the author "For your reflection on presentation skills: Sir Tim Berners-Lee invented the world wide web 25 years ago. So it's worth a listen when he warns us ... (6.47 min.)". A video player is embedded, showing a man speaking on a stage with a large "W" logo. The video title "Tim Berners-Lee: A Magna Carta for the web" is overlaid on the video. Below the video player is an "Add comment" button. To the right of the video player is a text area labeled "Your previous comments".

Writing comments

To write a comment, the student clicks the *Add comment* button (shown below the video). The following screenshot shows a situation when the student is adding a comment. AVW-Space shows the box where the student can type the text of the comment. The aspects are shown as options, following “*What does it relate to?*”



The screenshot shows a web interface for writing a comment. At the top, there is a breadcrumb trail: "Student Actions > Space: Presentation Skills > Watch Video: TUTORIAL 2: How to open and close presentations?". Below this is the video title "Watch video: TUTORIAL 2: How to open and close presentations?" and a subtitle "Presentation lesson from Mark Powell, Cambridge University Press ELT, 7 min.". A video player shows a man speaking with the text "'bookend your talk'" overlaid. To the right of the video is a large empty box labeled "Your previous comments". Below the video is an "Add Comment" button and a text input field. Underneath the input field is the question "What does it relate to?" followed by four radio button options: "I am rather good at this", "I did/saw this in the past", "I didn't realize I wasn't doing this", and "I like this point". At the bottom left are "Save comment" and "Cancel" buttons.

For the Presentation Skills space, we have defined four aspects for tutorials, and four aspects for example videos. As visible on the screenshot, the aspects for tutorials are:

- I am rather good at this
- I did/saw this in the past
- I didn't realize I wasn't doing this
- I like this point

The goal of aspects is to support the student to reflect on their past experience in giving presentations. The student can then save the comment.

If the student has written some comments already, they are listed on the same page, as illustrated in the following screenshot.

The screenshot shows the AVW-Space interface. At the top, there is a green header with 'AVW-Space' and a user login status: 'Logged in as: UCStudyID491 (Student) | Edit account | Logout'. Below the header is a navigation bar with 'Student actions'. The main content area shows a breadcrumb trail: 'Student Actions > Space: Presentation Skills > Watch Video: TUTORIAL 2: How to open and close presentations?'. The video title is 'Watch video: TUTORIAL 2: How to open and close presentations?'. Below the title, it says 'Presentation lesson from Mark Powell, Cambridge University Press ELT, 7 min.'. The video player shows a woman presenting in front of a screen with the text 'Staff Initiative Home'. The video progress bar shows 5:49 / 7:36. Below the video player is an 'Add comment' button. To the right of the video player is a box titled 'Your previous comments' containing three entries:

- 01:54 Strong use of Adjectives in opening
Aspect: I like this point
- 03:16 Less use of specific details, shorter sentences. Easier to follow
Aspect: I like this point
- 07:29 "Always give priority to the first and last 3 minutes"
Aspect: I did/saw this in the past

In our study, we asked the participants to watch the tutorials first, and then later to watch the example videos, and to comment on their quality. For comments on videos, students are given four aspects: Structure, Delivery, Speech and Visual Aids. These aspects have been previously covered in the tutorials. We have deliberately selected examples so that they differ in quality, the gender of the presenter, and the topic of presentation.

Rating comments

In Phase 2, students rate comments written by their peers. Once the teacher approves the comments for viewing by the class¹, the student can see them by clicking the [Review comments](#) link. The following screenshot shows comments for one of the example videos. The comments are ordered by the elapsed time in the video. The student can read comments, and rate them. The screenshot below shows the list of ratings, which is available by clicking on the drop-down menu.


¹The instructions for how to approve comments for viewing are presented in a later section.

AVW-Space Logged in as: UCstudyID491 (Student) | Edit account | Logout

Student actions

Student Actions » Space Instance: Presentation Skills
 » Review video comments: EXAMPLE 1 - Abraham Heifets: How can we make better medicines? Computer tools for chemistry

Review video comments for "EXAMPLE 1 - Abraham Heifets: How can we make better medicines? Computer tools for chemistry"



Comments

00:00 Finished with a clear summary of what his research is for. The finish linked nicely with his opening statements.
 Aspect: Speech
 Commenter: Other
 Your response:

00:28 Good silence at...
 Aspect: Delivery
 Commenter: You
 Your response:

00:30 'Story' in intro...
 Aspect: Delivery
 Commenter: You
 Your response:

00:34 Give the audience a story and lead them on it, even if the story is only a short one as a motivation
 Aspect: Structure
 Commenter: Other
 Your response:

00:38 No. Don't like it. A meaningless slide at this point dominates my view and the speaker is shoved to the edge.
 Aspect: Visual aids
 Commenter: Other
 Your response:

00:44 Good opening, straight into the topic in an accessible way
 Aspect: Speech
 Commenter: Other

When reviewing comments made on the same videos by other students, the student sees other opinions, and might notice something he/she missed. We have specified five rating options, which also aim to focus the student's attention to comments and support learning:

- This is useful for me
- I hadn't thought of this
- I didn't notice this
- I do not agree with this
- I like this point

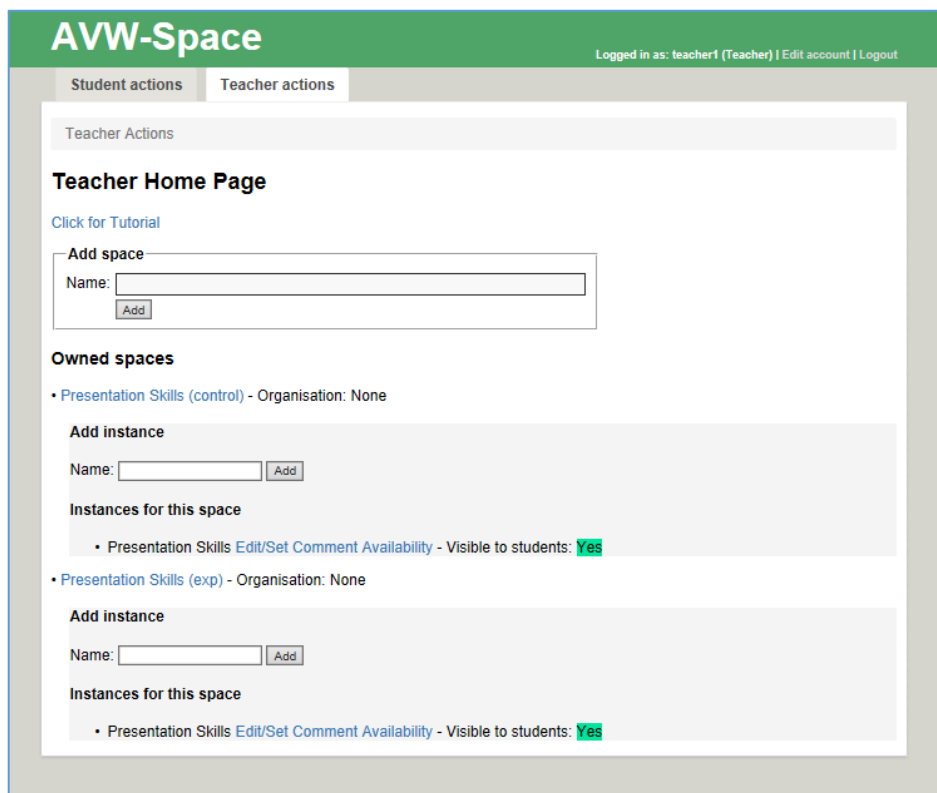
The first three ratings show that the student has noticed something new and useful in comments (thus indicating learning). The last two options allow the student to state their opinion about a comment.

TEACHER ACTIONS

Teachers can create new spaces, specify videos and aspects for them.

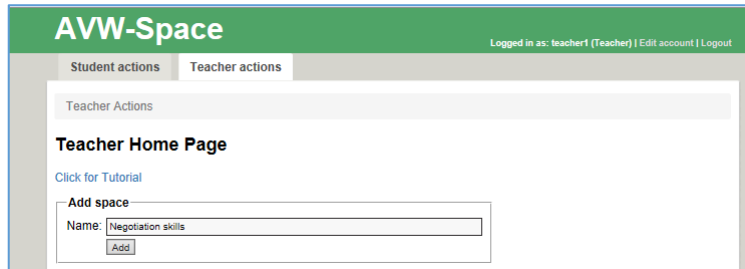
Instructions for performing teacher actions are available within AVW-Space via the [Click for Tutorial](#) link.

The screenshot below shows the Teacher Home Page. Please note that the page shows the spaces the teacher has previously defined (below *Owned spaces*).



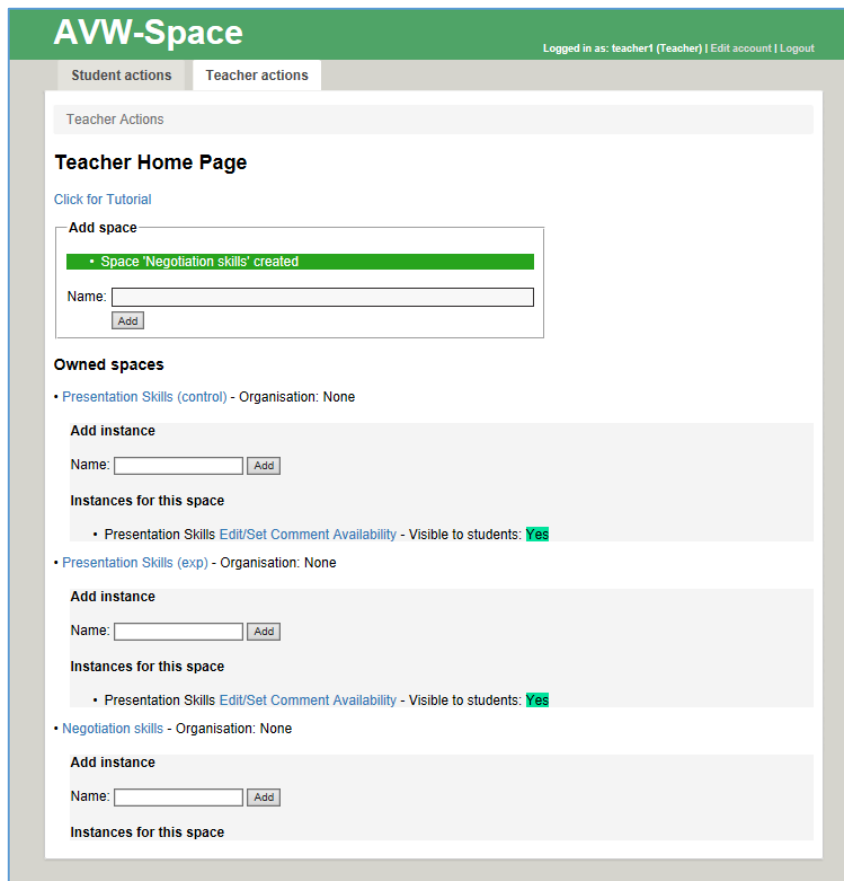
Creating a new space

The teacher can add a new space by specifying the name of the space, and clicking the [Add](#) button. For each space, the teacher needs to define a name. For example, let us create a space related to negotiation skills.



The screenshot shows the AVW-Space interface. At the top, there is a green header with the text "AVW-Space" and "Logged in as: teacher1 (Teacher) | Edit account | Logout". Below the header, there are two tabs: "Student actions" and "Teacher actions". The "Teacher actions" tab is active. Underneath, there is a section titled "Teacher Actions" and "Teacher Home Page". A link "Click for Tutorial" is visible. The "Add space" section contains a text input field with the value "Negotiation skills" and an "Add" button.

The teacher then clicks the [Add](#) button, and AVW-Space confirms that the new space has been created. Please note that the new space has appeared at the end of the page.



The screenshot shows the AVW-Space interface after the space has been created. The header and tabs are the same. The "Add space" section now displays a green confirmation message: "• Space 'Negotiation skills' created". Below this, the "Owned spaces" section is visible, listing three spaces: "Presentation Skills (control)", "Presentation Skills (exp)", and "Negotiation skills". Each space has an "Add instance" section with a text input field and an "Add" button, and an "Instances for this space" section with a list of instances. The "Negotiation skills" space is the newly created one.

The next step is to add other components of the space – videos, aspects and rating options. To do that, the teacher needs to click on the space name (in this case, [Negotiation skills](#)), which leads him/her to the following page.

AVW-Space Logged in as: teacher1 (Teacher) | Edit account | Logout

Student actions | **Teacher actions**

Teacher Actions > Space: Negotiation skills

Space - Negotiation skills

Edit Properties

Name:

Use same aspects for all videos *If this is selected, then each video will have any 'space-wide' aspects available to them*

Clone Space

This will clone the current space, creating copies of the properties, videos, and aspects. Users will not be copied across. This cloned space can then be edited without affecting this copy.

Name for new cloned space:

Videos:

Add video

Youtube ID: Name: Description:

Aspects

Note: 'In space-wide group' is only relevant if 'Use same aspects for all' is set above for the space

Add aspect

Text:

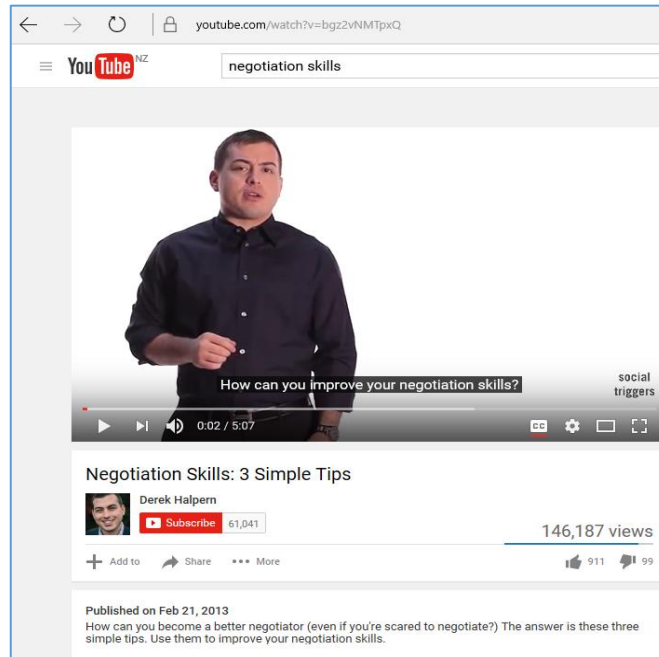
Ratings

Add rating

Name:

Adding videos

To add a video, find the video you want to include in your space from YouTube. You need the identifier, which is the last part of the URL shown in your browser. For example, the identifier of the video below is “bgz2vNMTpxQ”.



Enter the video identifier into the YouTube ID box, and then specify the name of the video which will be shown to your students, together with a short description.

Videos:
Add video

Youtube ID: Name: Description:

After clicking the [Add](#) button, AVW-Space confirms the addition:

Videos:
3 tips [Edit video properties](#)

Add video

• Video '3 tips' added

Youtube ID: Name: Description:

The teacher can add all videos at once. It is also possible to add other videos at a later time.

Adding aspects and ratings

Aspects and ratings can be added from the same page. Simply specify the text for the aspect/rating, and click the [Add](#) button. Please note that aspects are optional – you can have a space without aspects. In that case, students will not be asked to specify aspects when writing comments. However, we strongly encourage the use of aspects: the results of our studies show that the aspects do focus students on important elements of videos, and also support reflection.

Aspects
Note: 'In space-wide group' is only relevant if 'Use same aspects for all' is set above for the space
Text: In space-wide group
Text: In space-wide group
Text: In space-wide group

Aspects and ratings can be added all at once, or at different times.

Specifying aspects for videos

The same set of aspects can be used for all videos in a space. It is also possible to specify different aspects for different videos (like it was done for the Presentation skills space, in which we have different aspects for tutorials and example videos).

Using the same aspects for all videos

To use the same aspects for all videos, set this option by selecting the “In space-wide group” box, like in the screenshot below.

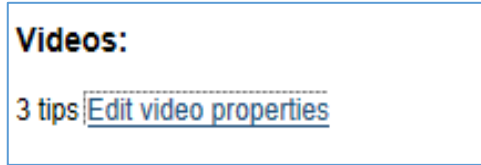
Aspects
Note: 'In space-wide group' is only relevant if 'Use same aspects for all' is set above for the space
Text: In space-wide group
Text: In space-wide group
Text: In space-wide group

After this, specify that the same aspects are to be used for all videos in the space:

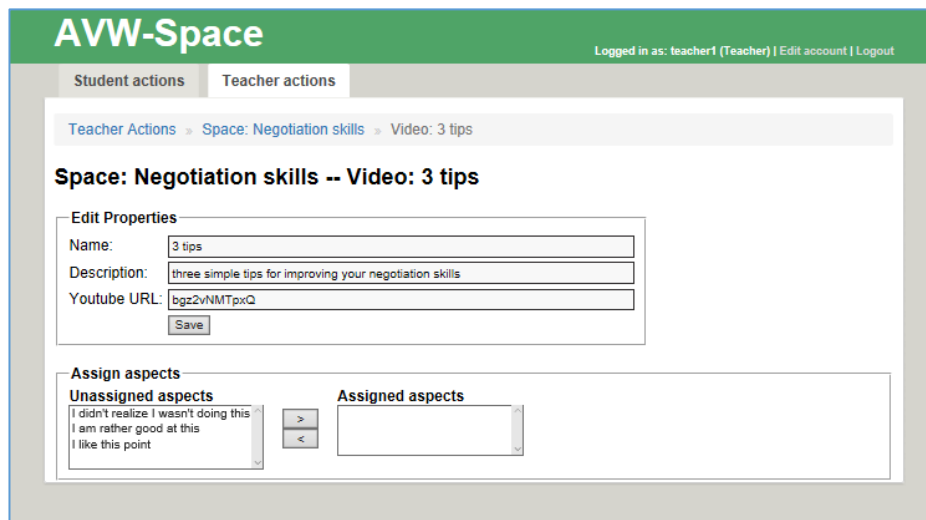
Space - Negotiation skills
Edit Properties
• Property edits saved
Name:
Use same aspects for all videos *If this is selected, then each video will have any 'space-wide' aspects available to them*

Specifying aspects for a single video

To specify aspects for a specific video only, click on [Edit video properties](#) link next to the video from the space page:



You will get the page below:



AVW-Space Logged in as: teacher1 (Teacher) | [Edit account](#) | [Logout](#)

[Student actions](#) | [Teacher actions](#)

[Teacher Actions](#) > [Space: Negotiation skills](#) > [Video: 3 tips](#)

Space: Negotiation skills -- Video: 3 tips

Edit Properties

Name:

Description:

Youtube URL:

Assign aspects

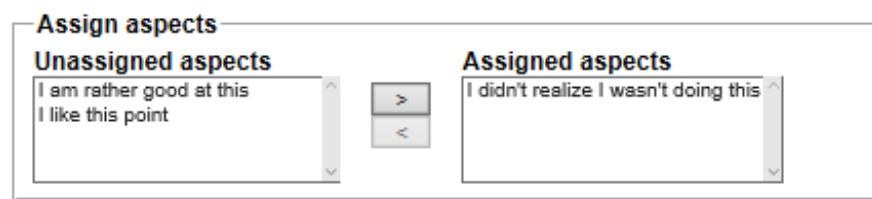
Unassigned aspects

- I didn't realize I wasn't doing this
- I am rather good at this
- I like this point

Assigned aspects

-

To specify the aspects for the selected video, click on the aspect and then click on the > button (use the < button to remove an aspect from the assigned aspects).



Assign aspects

Unassigned aspects

- I am rather good at this
- I like this point

Assigned aspects

- I didn't realize I wasn't doing this

Creating an instance of a space

The teacher might want to have several instances of the same space. For example, the teacher might want to start with a fresh space for each instance of a course he/she teaches. For that reason, it is necessary to create a space instance.

To create an instance of a space, go to the home page, specify the name of the instance and click the Add button:

• [Negotiation skills](#) - Organisation: None

Add instance

Name:

There could be many instances of the same page. After adding the instance, AVW-Space adds its name to the list of instances:

• [Negotiation skills](#) - Organisation: None

Add instance

Name:

Instances for this space

- [Negotiation skills 2017](#) [Edit/Set Comment Availability](#) - Visible to students: **No**

Please note that that the instance is not available to students yet (the *Visible to students* parameter is set to *No*).

Cloning a space

Cloning a space is equivalent to making a duplicate of the space. The teacher can clone a space by simply specifying the name for the cloned space (which should be different to the name of the original space).

Clone Space

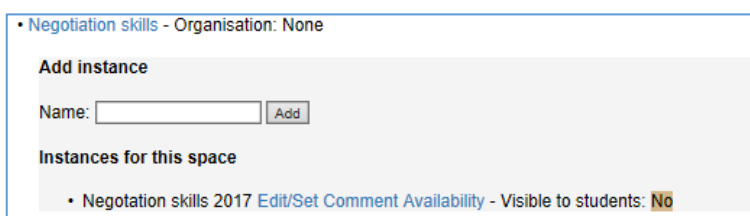
This will clone the current space, creating copies of the properties, videos, and aspects. Users will not be copied across. This cloned space can then be edited without affecting this copy.

Name for new cloned space:

Adding students to the space instance

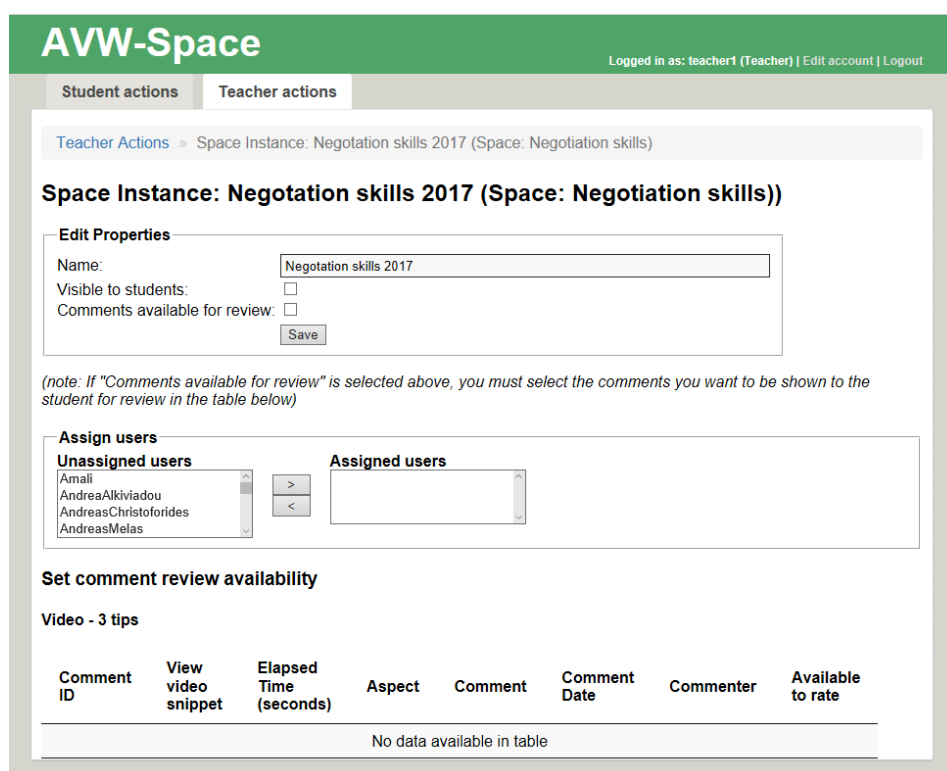
Student accounts need to be created before students can be added to the space instance. Only administrators can create student accounts, so as a teacher, you need to request student accounts to be created.

To add students to the space instance, click on [Edit/Set Comment Availability](#).



The screenshot shows a form titled "Add instance" within a space instance named "Negotiation skills - Organisation: None". The form has a "Name:" input field and an "Add" button. Below the form, there is a section titled "Instances for this space" which contains a list item: "Negotiation skills 2017 [Edit/Set Comment Availability](#) - Visible to students: **No**".

The following page allows the teacher to add students to the space.



The screenshot shows the "AVW-Space" interface. The top navigation bar is green and contains the text "AVW-Space" and "Logged in as: teacher1 (Teacher) | [Edit account](#) | [Logout](#)". Below the navigation bar, there are two tabs: "Student actions" and "Teacher actions". The "Teacher actions" tab is active. The main content area is titled "Teacher Actions" and shows the path "Space Instance: Negotiation skills 2017 (Space: Negotiation skills)".

The main section is titled "Space Instance: Negotiation skills 2017 (Space: Negotiation skills)". It contains several sections:

- Edit Properties:** A form with a "Name:" field containing "Negotiation skills 2017", a "Visible to students:" checkbox (unchecked), and a "Comments available for review:" checkbox (unchecked). There is a "Save" button.
- (note: If "Comments available for review" is selected above, you must select the comments you want to be shown to the student for review in the table below)*
- Assign users:** A section with two lists: "Unassigned users" and "Assigned users". The "Unassigned users" list contains: Amali, AndreaAlkiviadou, AndreasChristoforides, and AndreasMelas. There are ">" and "<" buttons between the lists.
- Set comment review availability:** A section with a "Video - 3 tips" link.
- Table:** A table with the following columns: Comment ID, View video snippet, Elapsed Time (seconds), Aspect, Comment, Comment Date, Commenter, and Available to rate. The table is currently empty, with the text "No data available in table" displayed below it.

To add a student, click on the student's name in the *Unassigned users* list, and then click on the > button. It is also possible to select multiple students at once, and move them across to the *Assigned users* list.

The next step is to enable the space – that is achieved by ticking the *Visible to students* box. After that, click [Save](#).

AVW-Space
Logged in as: teacher1 (Teacher) | [Edit account](#) | [Logout](#)

Student actions
Teacher actions

[Teacher Actions](#) > Space Instance: Negotiation skills 2017 (Space: Negotiation skills)

Space Instance: Negotiation skills 2017 (Space: Negotiation skills)

Edit Properties

Name:

Visible to students:

Comments available for review:

(note: If "Comments available for review" is selected above, you must select the comments you want to be shown to the student for review in the table below)

Assign users

Unassigned users

- UCstudyID526
- UCstudyID617
- UCstudyID628
- UCstudyID643
- UCstudyID660

Assigned users

- UCstudyID531
- UCstudyID564
- UCstudyID578

Set comment review availability

Video - 3 tips

Comment ID	View video snippet	Elapsed Time (seconds)	Aspect	Comment	Comment Date	Commenter	Available to rate
No data available in table							

The space is now ready, and Phase 1 (commenting on videos) commences.

Selecting comments for review

When the class is ready for Phase 2 (reviewing and rating comments), the teacher first needs to select the comments to be visible to the class. In order to do that, the teacher needs to click the [Edit/Set Comment Availability](#) link for the particular space, and review the comments. The comments are listed under the *Set comment review availability* section of the page. The comments are organized by the video. In order to make a comment available to the class, it is necessary to tick the *Available to rate* box for the relevant comments. In the screenshot below, the first two comments for Tutorial 1 are not available to the class.

Set comment review availability							
Video - TUTORIAL 1: How to Give an Awesome (PowerPoint) Presentation							
Comment ID	View video snippet	Elapsed Time (seconds)	Aspect	Comment	Comment Date	Commenter	Available to rate
1	View from elapsed time	0	I didn't realize I wasn't doing this	test	22/07/2016 1:37:26 AM	tanja	<input type="checkbox"/>
4	View from elapsed time	0	I didn't realize I wasn't doing this	Adding a comment	22/07/2016 1:20:06 PM	tanja	<input type="checkbox"/>
144	View from elapsed time	6.2	I like this point	I like the focus on having less slides with information, and more on building the "story" of the presentation. It's good to think about what visual aids you're giving your audience	28/07/2016 9:44:48 PM	UCstudyID526	<input checked="" type="checkbox"/>
92	View from elapsed time	20.5	I like this point	Gets my attention straight away. enjoy that the "slides" are being drawn as I watch.	28/07/2016 1:04:59 PM	UCstudyID505	<input checked="" type="checkbox"/>
15	View from elapsed time	67.4	I like this point	Take the viewer on a coherent story. Beginning, middle, end like a novel or other media.	26/07/2016 9:45:53 PM	UCstudyID873	<input checked="" type="checkbox"/>
The begining middle end							

Obtaining the usage data

AVW-Space collects a lot of data about students' actions. The system collects data about each student, including when the student logs in, videos watched (including various actions on the video such as fast-forwarding), time stamp for each comment/rating made etc. Such click-stream data can be exported from the system. Please contact the administrator to get the data for your space.

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