Northern Regional Hub-funded project

Project Report

Manage a Peer Assessment Activity using Xorro

Reference Guide for Teachers and Students

Peter Mellalieu and Patrick Dodd

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Ako AOTEAROA

PEER ASSESS PRO™

Unitec Institute of Technology

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QUICK START GUIDE

This table shows the sequence of steps required to register, launch, manage, and download the final gradebook for a Peer Assess Pro peer assessment using Xorro.

Step / Xorro	Task / Reference Manual	Section
REGISTER	once for your free Xorro Teacher's account.	1.1
TEAMSET	Create a TeamSet CSV (Comma Separated Variables) file containing your class list organised into teams. Adapt the sample format.	2.1
LOGIN	to your Xorro Teacher's account dashboard, at https://qf.xorro.com/	1.2
ORIENT	yourself to launching and managing a peer assessment activity using Xorro.	1.3
LAUNCH	a peer assessment activity. You will be presented with the option to import your TeamSet CSV.	2.3
MANAGE	your running (launched) peer assessment activity through carrying out the following tasks.	3.0
WARNING	Action your responses to Warning Alerts presented in the Peer Assess Pro Teacher's Dashboard.	3.1
TEAM RESULTS	may be entered. Not required in certain cases.	3.3
SELECT	the Personal Result Calculation Method.	3.4
REVIEW	class, team, and individual results, charts, statistics and qualitative feedback.	3.5
PUBLISH	Provisional (optional) then final official results and feedback for view by team members.	3.6
FINALISE	the peer assessment activity to prevent further responses from students.	4.0
DOWNLOAD	Finalised Teacher's Gradebook, Qualitative and Teacher's Feedback as CSV files.	4.3

Hyperlinked at www.peerassesspro.com/quickstart-guide-for-teachers

Most Frequently Asked Questions (FAQs)

>>> More FAQs at www.peerassesspro.com/frequently-asked-questions-2

FAQ: What is the purpose of peer assessment?

FAQ: What questions are asked in the peer assessment survey?

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity

FAQ: How do I correct the Team Composition in a running peer assessment activity?

Quick Link Map

Everyone	For teachers	For team members
Xorro-Q help	Login to Xorro-Q	Join peer assessment activity
www.peerassesspro.com	The peer assessment survey	The purpose of peer assessment
Reference guide: Table of contents	Login and orientation	Undertake the peer assessment
FAQs on the web at http://tinyurl.com/papFAQ	Launch peer assessment activity	Use peer assessment results for better performance
Videos	Manage the peer assessment activity	
Quickstart guide for teachers	Definitions, calculations, and examples	
Contact us	Miscellaneous	

Launching Peer Assess Pro™ using Xorro-Q

>>> Reference Guide at http://tinyurl.com/papRefPdf

This guide helps teachers familiar with peer assessment[1] to use our new Xorro-Q platform for managing peer assessment activities using Peer Assess Pro™. Once logged in to Xorro-Q, you launch a peer assessment activity. During the launch process, you upload a Peer Assessment Teamset that specifies team members, a unique id, their team and class membership and, optionally, their email. The Teamset is a comma separated variables (csv) file illustrated below. The Peer Assess Pro peer assessment activity notifies by email to each team member a unique, student-specific survey activity URL that gathers their peer assessments of their team members. Timely reminders and final result announcements are automatically generated and communicated to the students from Peer Assess Pro.

Teachers Process Flowchart: Overview

>>> Hyperlinked chart at http://tinyurl.com/papChart

[1] New to peer assessment? See our FAQ: What is the purpose of peer assessment?

Questions, Feedback and Contact

Ask us for help, give us feedback, and request additional features.

https://www.peerassesspro.com/contact/

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Peter Mellalieu peter@peerassesspro.com +64 21 42 0118 Skype myndsurfer

Example Peer Assessment TeamSet CSV File

id	first	last	group_code	team	email
ALJO11	Alice	Jones	BUS123.101/PMell/TutB/2020-05-28/SUM	Panda	Alice.Jones@noreply.com
AMTO01	Amanda	Tolley	BUS123.101/PMell/TutB/2020-05-28/SUM	Bear	Amanda.Tolley@noreply.com
ANWO08	Anna	Worth	BUS123.101/PMell/TutB/2020-05-28/SUM	Bear	Anna.Worth@noreply.com
BOWI12	Bob	Wilson	BUS123.101/PMell/TutB/2020-05-28/SUM	Tiger	Bob.Wilson@noreply.com
GRGR15	Greta	Green	BUS123.101/PMell/TutB/2020-05-28/SUM	Panda	Greta.Green@noreply.com
HEJO19	Henry	Jones	BUS123.101/PMell/TutB/2020-05-28/SUM	Tiger	Henry.Jones@noreply.com
HOBR03	Holly	Brown	BUS123.101/PMell/TutB/2020-05-28/SUM	Bear	Holly.Brown@noreply.com
JEWA06	Jeff	Wang	BUS123.101/PMell/TutB/2020-05-28/SUM	Panda	Jeff.Wang@noreply.com
JOSM13	John	Smith	BUS123.101/PMell/TutB/2020-05-28/SUM	Tiger	John.Smith@noreply.com

>>> Download CSV, EXCEL, or Google Sheet

Example Survey Questions for a Team Member

Part A: Overall Recommendation

5

How likely is it that you would recommend this team member to a friend, colleague, or employer?

	Very Unlikely		Neutral		Very Likely
Karl MARC:					
Quinten CRISP:					
Ritchie CHOR:					
Sandy SHORE (Self):					

Screenshots of the peer assessment activity

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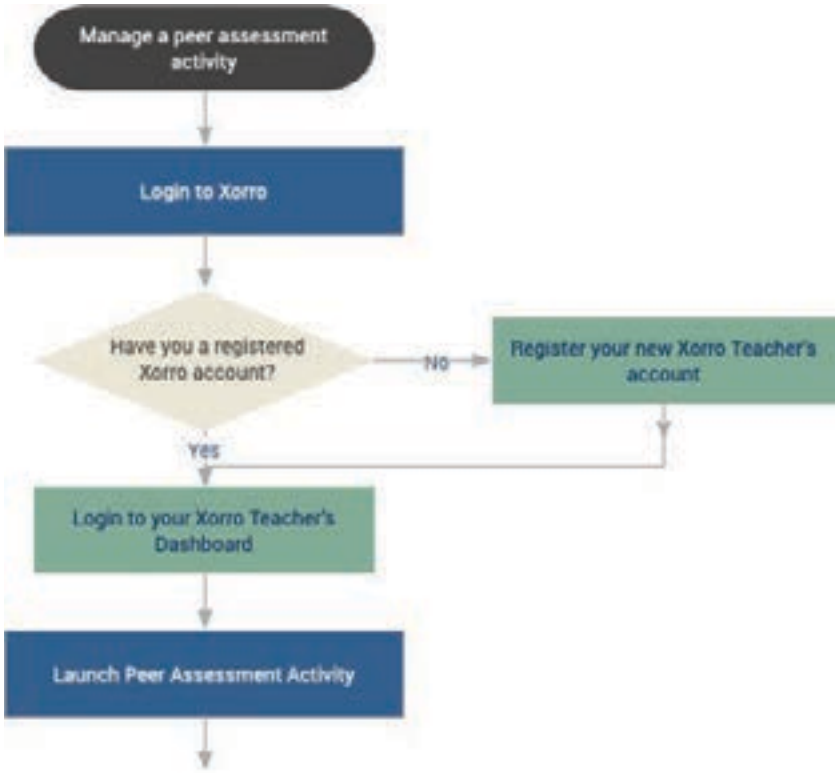
1. Login to your Xorro HOME page



1.1 First time users: Register

Register a new Xorro Teacher's Account as a Free Facilitator

Sign up as a Free Facilitator to trial the use of Peer Assess Pro using the Xorro-Q interface:

Sign up as a Free Facilitator

https://www.xorro.com/free_accounts/new

Getting started with Xorro Q

For related information relevant to registering as a new facilitator:

Getting Started with Xorro Q

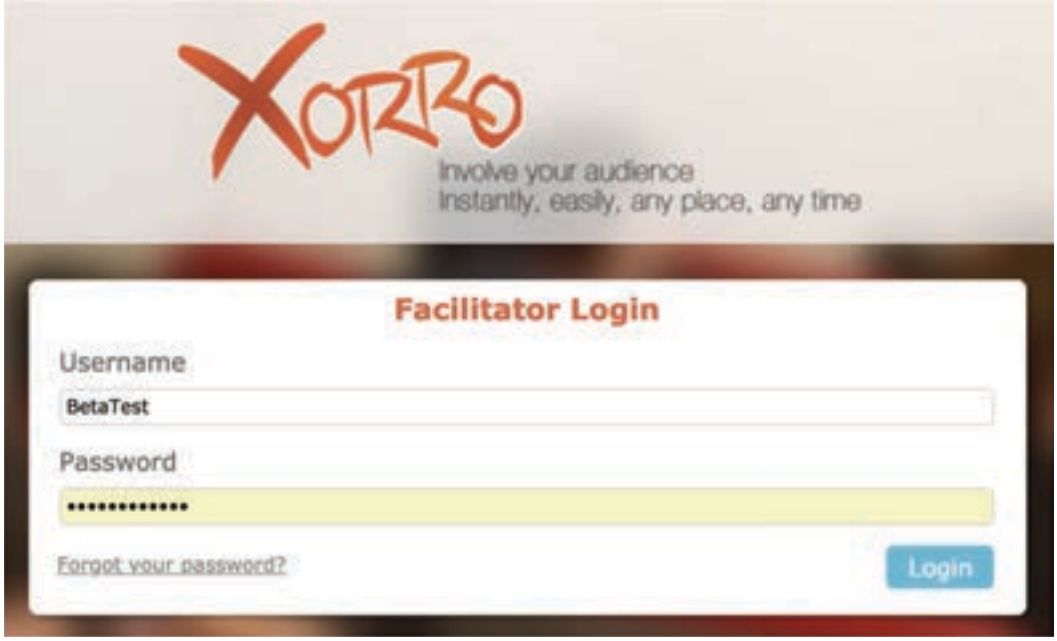
Extended free trial for New Zealand higher education institutions

New Zealand higher education institutions have an extended free trial period for the use of Peer Assess Pro. This free access is under an arrangement with Te Ako Aotearoa.

For further details contact Patrick Dodd at the offices of Peer Assess Pro.

1.2 Login from your registered Xorro Account

- Browse to: http://qf.xorro.com
- Enter the **Username** and **Password** with which you were registered.



After you login, The your Xorro HOME Dashboard page shows will display, as shown in Section 1.3 Orient yourself to the Xorro HOME Dashboard

Now proceed to follow the steps in the Quickstart Guide, or the detailed explanations in Section 2. Launch Peer Assessment Activity

Quick links and related information

VIDEO: Login and orientation

View: Quick Start Guide

Section 1.3 Orient yourself to the Xorro HOME Dashboard

FAQ: How do I find the the Peer Assess Pro Teacher's dashboard?

1.3 Orient yourself to the Xorro HOME Dashboard

Your Xorro HOME Dashboard page shows

- **Along the top right:**
  - HOME - this page!
  - ACTIVITIES - All Running and the results from previous Activities you have executed and are Finalised and Expired..
  - PARTICIPANTS - Here you view and **import** a class list of participants allocated into their teams, a **teamset**.
- **Down the left:**
  - **RUNNING ACTIVITIES** - shows peer assessment and other Xorro Activities you have **Created** and **Launched**, but are not yet **Expired**
  - **RECENT PREPARED ACTIVITIES** - activities you have created, but which have not yet **Started**. An unstarted activity means team members cannot view, login, access or complete the activity through their **Participant's URL.** The activity will not yet be listed.
  - **RECENT RESULTS** from **Expired** activities. A peer assessment activity is Expired automatically two weeks after it is **FINALISED** by the teacher from the Peer Assess Pro dashboard. **Results from an Expired Activity can no longer viewed by a student**.
- Participant's URL - A team member can find ALL your current RUNNING ACTIVITIES at this URL. Follow the Participant's URL to experience how a student sees Xorro Peer Assess Pro.
- When in doubt, lost, or confused select the HOME page or ?HELP

Quick links and related information

VIDEO: Login and orientation

View: Quick Start Guide

FAQ: How do I find the the Peer Assess Pro Teacher's dashboard?

FAQ: How do I view a demonstration version of Xorro Peer Assess Pro?

Peer Assess Pro system flowchart detail

Peer Assess Pro system flowchart detail http://tinyurl.com/papChart

Each process box in the flowchart pdf version of the flowchart links directly to the specific page in this Reference Guide that explains that step in the process.

1.4 Orient yourself to the Peer Assess Pro Dashboard

(To come)

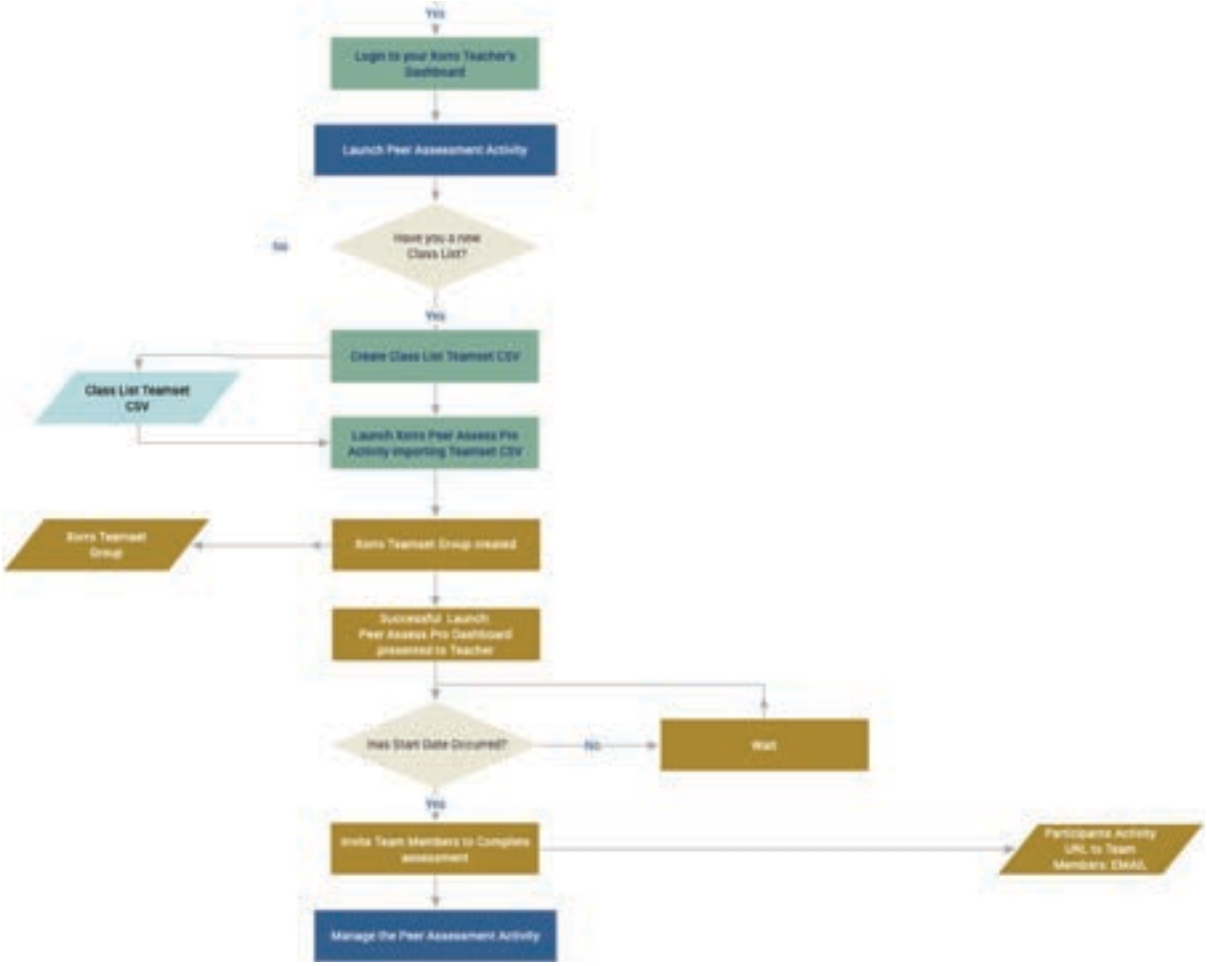
1.5 Peer Assess Pro system flowchart detail

PDF with hyperlinks at *Xorro Peer Assess Pro™ Teachers Process Flowchart* http://tinyurl.com/papChart

(To come)

TOP FAQs

2. Launch Peer Assessment activity



2.1 Quick start launch

Create a **Comma Separated Variables (CSV)** file containing your class list that shows every team member organised into teams. This is your **TeamSet CSV** file. A sample of the file format is shown in **Section 2.2 Create the peer assessment teamset CSV file**

Use any of these following templates to adapt and create your TeamSet CSV file using your preferred editor.

After editing the template, remember to create a CSV file type using **SAVE AS CSV, DOWNLOAD AS CSV** or **EXPORT AS CSV,** depending on your spreadsheet editor.

Excel sheet

Google Sheet

CSV file

For a registered Xorro user, use this link to launch a new **peer assessment** activity. You will be presented with an option to **import** directly your CSV teamset.

https://qf.xorro.com/pap/launches/new

If your CSV refuses to load, or the activity fails to create, review the detailed steps in the next sections to ensure your CSV is perfectly created.

Check carefully that the specifications detailed in the **INSTRUCTIONS** and **COLUMN EXPLANATIONS** presented within the template are followed strictly.

One cause of catastrophic failure is when a student is specified in more than one team. Sometimes this can happen when you have two similarly named, but not identical teams and the ids are repeated in the two teams.

2.2 Create the peer assessment teamset CSV

Use a spreadsheet editor, such as Google Sheets, Excel or Numbers to produce a file that contains columns of data with these column headers id, first, last, group_code, team, and email. Precise **INSTRUCTIONS** and **COLUMN EXPLANATIONS** for each of these data are detailed below.

Alternative TeamSet CSV templates

Use any of these templates to adapt and create your TeamSet CSV (comma separated variables file) using your preferred editor. The templates contain the example data and instructions shown below.

CSV file

Excel sheet

Google Sheet

In the sample files, only the group **BUS123.101/PMell/TutB/2020-05-28/SUM** is a valid teamset suitable for processing by Peer Assess Pro. This is the only group that specifies membership of teams by the students in the class, the teams being Panda, Bear and Tiger.

Sample peer assessment teamset csv

id	first	last	group_code	team	email
ANWO08	Anna	Worth	ARTS123.204/WShak/2021-02-28		
GRGR15	Greta	Green	ARTS123.204/WShak/2021-02-28		
ALJO11	Alice	Jones	BUS123.101/PMell/TutB/2020-05-28/SUM	Panda	Alice.Jones@noreply.com
AMTO01	Amanda	Tolley	BUS123.101/PMell/TutB/2020-05-28/SUM	Bear	Amanda.Tolley@noreply.com
ANWO08	Anna	Worth	BUS123.101/PMell/TutB/2020-05-28/SUM	Bear	Anna.Worth@noreply.com
BOWI12	Bob	Wilson	BUS123.101/PMell/TutB/2020-05-28/SUM	Tiger	Bob.Wilson@noreply.com
GRGR15	Greta	Green	BUS123.101/PMell/TutB/2020-05-28/SUM	Panda	Greta.Green@noreply.com
HEJO19	Henry	Jones	BUS123.101/PMell/TutB/2020-05-28/SUM	Tiger	Henry.Jones@noreply.com
HOBR03	Holly	Brown	BUS123.101/PMell/TutB/2020-05-28/SUM	Bear	Holly.Brown@noreply.com
JEWA06	Jeff	Wang	BUS123.101/PMell/TutB/2020-05-28/SUM	Panda	Jeff.Wang@noreply.com

JOSM13	John	Smith	BUS123.101/PMell/TutB/2020-05-28/SUM	Tiger	John.Smith@noreply.com
THWI18	Thomas	Windsor	BUS123.101/PMell/TutB/2020-05-28/SUM	Tiger	Thomas.Windsor@noreply.com
ANWO08	Anna	Worth	COMP123.201/PDod/TutA/2020-10-01		Anna.Worth@noreply.com
HOBR03	Holly	Brown	COMP123.201/PDod/TutA/2020-10-01		Holly.Brown@noreply.com
JOSM13	John	Smith	COMP123.201/PDod/TutA/2020-10-01		John.Smith@noreply.com

Instructions and column explanations for the Xorro peer assessment TeamSet CSV

INSTRUCTIONS

1. Organise your participants data into the columns corresponding to those shown in columns A to F, the first 6 columns headed 'id' through 'email'.

You might find it helpful to paste your data from row 17, below the sample data provided in rows 2 through 16.

The sample data provided demonstrates ten unique **individuals (ids)**, organised into three different **groups**.

A **group** might comprise all members of a class, or subdivisons such as streams, cohorts, sections, or tutorial groups.

A group is not a team. A group may contain several **teams**, in which case that's a Xorro **teamset.**

In the **group** called **BUS123.101/PMell/TutB/2020-05-28/SUM** the participants are additionally subdivided into three different **teams**, Bear, Panda and Tiger.

Only group **BUS123.101...** is a Xorro **teamset** suitable for a **peer assessment activity**.

2. If you are preparing a separate file, ensure you use exactly the same column headers for your list as shown in row 1.

That is, **'id', 'first', 'last', 'group_code', 'team', 'email'.**

These headers are case sensitive. NO CAPITALS.

The column header sequence is NOT IMPORTANT.

You may supply additional headers and columns of data. This data will be ignored by Xorro.

3. Read carefully the COLUMN EXPLANATIONS, below, for each type of data.

Some data is optional, and can be skipped, as shown for **group_code ARTS123.204/WShak/2021-02-28**

4. If you have used this page as your template, DELETE this 'instructions' column.

That is, delete anything not part of your data.

You still need the column headers. The headers must be on row 1 of your file.

5. Delete the sample data, immediately below the header row.

That is, everything between row 2 and row 16.

CHECK you **do not have duplicate ids** in the same **group**.

CHECK you do have all the **ids** in your class allocated to to a **group**, and, optionally, a **team**

6. Save (Download, Export, Save As) the file as a CSV, giving it an appropriate filename.

7. From Xorro-Q, browse to PARTICIPANTS, then upload the CSV file.

Alternatively, when you **Launch a Peer Assessment Activity**, you can IMPORT directly the CSV to create or update the activity.

From this sample file, upon upload three **groups** would be created in Xorro: ARTS..., BUS.... and COMP....

Only one of the **groups** is a **teamset** containing the three **teams** **Panda, Bear,** and **Tiger.**

8. COLUMN EXPLANATIONS

id - Compulsory field.
Identifier for this participant, must be unique for the entire institution.

For a **peer assessment activity**, this is the participant's **login id.**

No blanks or characters such as #@$%&*()+

first - Compulsory field.
Participant's first name

last - Compulsory field.
Participant's last name

group_code - Optional field. Required for a **peer assessment activity.**
The code for the group (ie course, class, stream, cohort) into which the participant is being enrolled.

If the participant is in multiple groups, supply a separate line for each group in which the participant is a member.

Good practice. Append to your root code, such as **BUS123.101**, abbreviations that indicate the teacher, activity date (start or due), subdivision (stream, cohort), summative or formative.

Note that **Anna Worth** is enrolled in three groups and in one **team**.

team - Optional field. Required for **peer assessment activity.**
The name of the team in which the participant is a member.

The participant can be a member of **one** team in the **same** group.

A participant may belong to different teams in different groups.

email - Optional field.
The participant's email.

Ideally required for a **peer assessment activity** when you require autogenerated warnings and notifications from Peer Assess Pro.

Requirements for a peer assessment teamset CSV file

- The **column headers must be represented exactly**. Namely, lowercase first, last, team, group_code, and so on.
- The **column headers may be provided in any sequence.**
- All students in the same class will usually have **the same Xorro group_code** designation. Typically, use your class code extended as detailed in the **Good Practice Hint** below. For large classes, review the section below
    - Large, multi-cohort streams in a class.
- **Check for duplicate ids** in your CSV, and REMOVE. A student cannot, must not, **shall not** be allocated to more than one team
- Ensure people with **similar names**, such as John SMITH and Cheung WANG have different ids.
- **Ensure teams have 3 or more team members**. Peer assessment results will not be produced for teams with 0, 1, or 2 members.
- 1123 ABC is an **invalid id** as it has a space between the characters. 123ABC is a **valid id**. #123ABC is an invalid id
- The **file type required for import into Xorro isCSV**, which means comma separated variables. You can download and view an example CSV file as described in the section Alternative teamset templates

Create a CSV version of your teamset file

After editing the template, remember to create a CSV version of your file. Depending on your editor, the appropriate command is:

FILE... SAVE AS ... TEXT CSV

FILE... DOWNLOAD AS ... Commas separated values (.csv)

FILE... EXPORT AS CSV

FILE... EXPORT TO... CSV

Why won't Xorro load my Teamset file?

Using the **FILE... SAVE** command in your spreadsheet editor will produce a file with the **incorrect file format**, such as **.xls, .sheet**, or **.numbers.**

Xorro will **reject** those file formats. Xorro accepts and loads only .csv.

See, for example,

> FAQ: How do I create a CSV file from a Google Sheet

Good practice hint: Create distinctive group codes for every peer assessment activity you launch

We advise creating a new, unique **group_code** for each Xorro Activity you create, even for repeat peer assessments within the same class term or semester.

Use a **group_code** like this

```
BT123.101/PJM/2020-03-28/FORM
```

We suggest your **group_code** include these elements as per the example above:

- The **class code** you use to designate the class or course, eg BT101
- The **teacher's initials or name,** eg PJM
- The **due date** or **start date** for the activity. eg 2020-03-28
- Optionally, annotate if the assessment is **formative (FORM)**, mid course, or end of teaching, **summative (SUM)**.

We recommend your resulting **group_code** should distinguish uniquely this semester's mid-semester formative peer assessment(s) from last semester's end of class summative where, perhaps, the same institutional class code would have a different set of student names.

The **group_code** is specified in the Team Members Group CSV file you import prior to launching a Xorro Peer Assess Pro™ Activity.

Large, multi-cohort streams in a class

In the general case, a very large class could comprise several cohorts, streams or tutorial sets, each subclass containing several teams conducting one or more peer assessment activities. Consequently, your group_code should help distinguish these separate peer assessment activities. For example,

BT123.101/PJM/TutB/2020-05-28/SUM

Here There Be Dragons!

Consider two teachers at the same institution teaching the same course but with different tutorial groups. If they use the same goup_code, such as BT101, they will load their own team sets into the same Xorro Participants' Group, additively, thereby causing mutual confusion and dismay. Similarly, a teacher using the same group_code from term to term, semester to semester, and year to year will experience similar grief.

Quick links and related information

FAQ: How do I correct the participants (team members) in a group I uploaded?

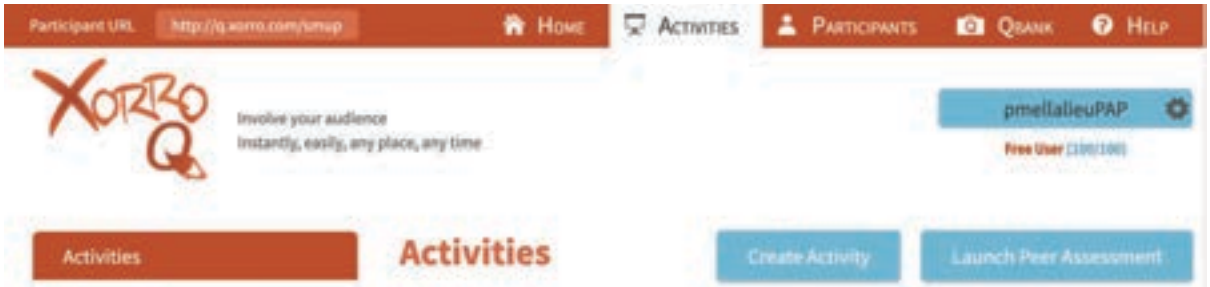
FAQ: How do I correct the Team Composition in a running peer assessment activity?

2.3 Launch and create the peer assessment activity

In summary

- Select ACTIVITIES from the Xorro top menu bar
- **Launch Peer Assessment**, in which you will **Import** the Teamset CSV created earlier.
- Initiate **Create Activity**
- View the **Peer Assess Pro Teacher's** dashboard
- Peer Assess Pro will automatically invite students to respond once the Start At date has been reached.

Select ACTIVITIES from the top menu bar



Launch Peer Assessment

Enter the following details, in this sequence

- **Activity Title** - A description that will be meaningful to your students, such as the class name and assessment type eg **BT101 Mid-semester Peer Assessment - Applied Management**
- **Teamset** - **Import** - Identify and load the **Teamset CSV file** that you created in Step 2.2 here.
- Note the **Group Code** will be determined automatically from the Imported Teamset CSV uploaded in the previous step.
- **Start At** - the date:time from which the students will be able to view and complete the peer assessment. Once you have Created the ACtivity, students will NOT be able to view the activity or submit their responses UNTIL the Start date.
- **Due Date** - this is the date that students will be advised by which they should complete the peer assessment. The **'Due Date'** date is advisory only. Students can CONTINUE to submit responses beyond the Due Date UNTIL the teacher Finalises the activity. AFter the Finalisation Date, the students will have two weeks to review their results.

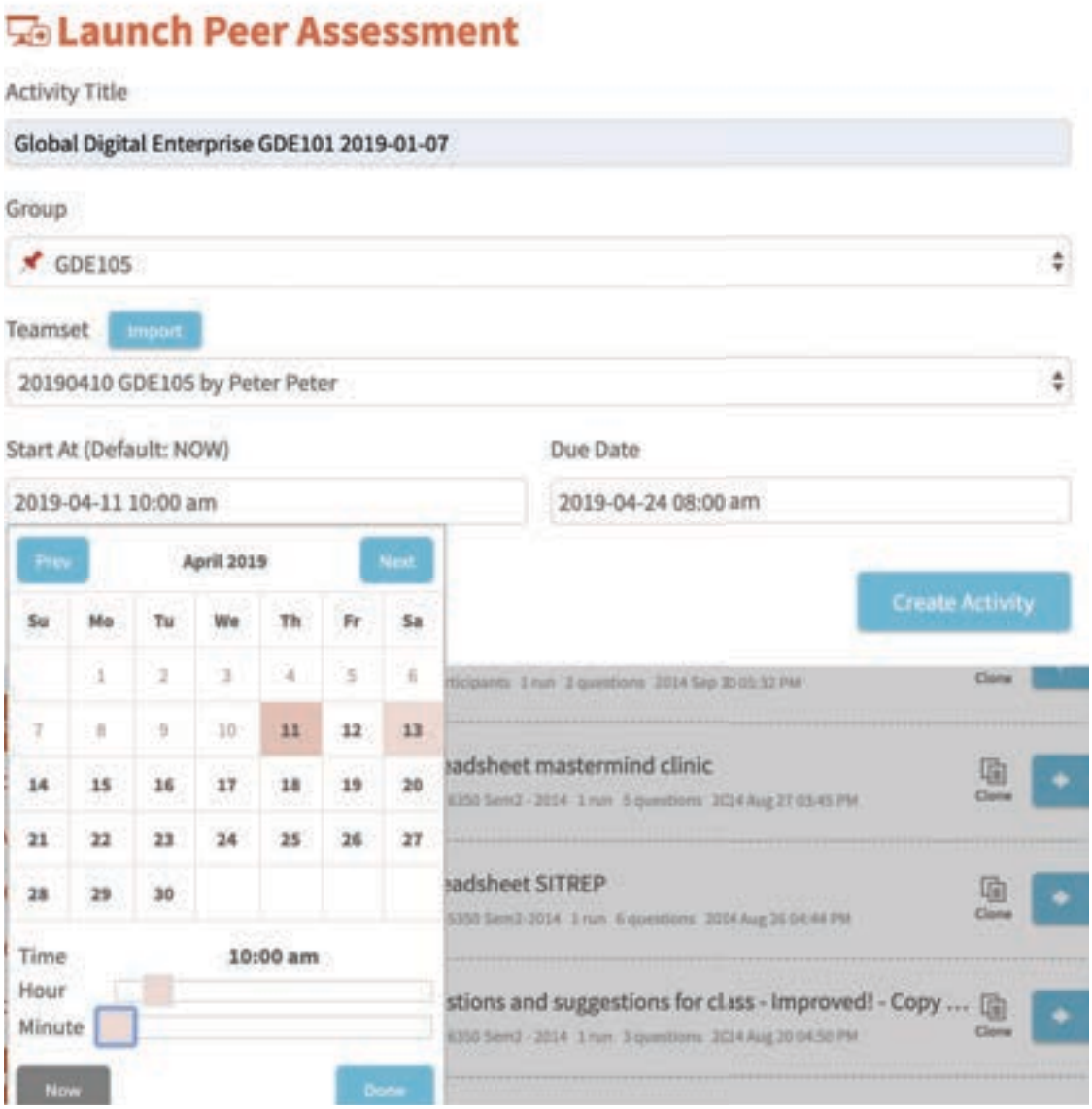
Initiate Create Activity

After setting the **Start At** and **Due Dates**, select **Create Activity**.

Here There Be Dragons

Double check your Start and Due Dates carefully!

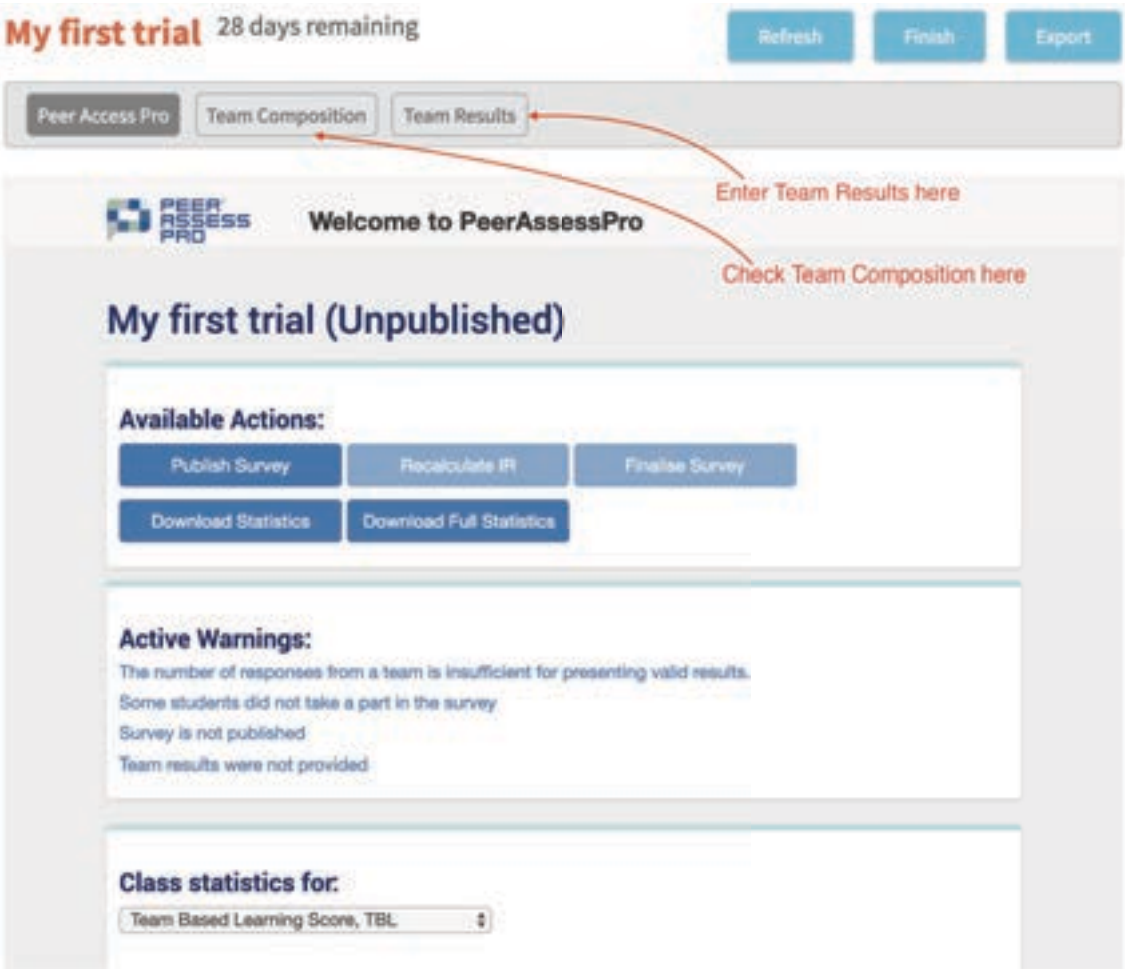
Once you **Create Activity** you cannot adjust the **Start Date**. The peer assessment Survey and the Email notifications to students requesting their response are created immediately. Adjusting the Start Date would confuse the students as the Participant Activity URLs would be announced to students, then could become unavailable to the students if dates were adjustable



View the Peer Assess Pro Teacher's dashboard

- The **Peer Assess Pro Teacher's Dashboard** will now show for this newly created activity
- Note the **Activity Title**, and **Days remaining** until the **Due Date** for student's completion
- Note the **Active Warnings**. These advise you of actions you must take to deal with a variety of circumstances that may require remedies.
- The created activity now appears as a **RUNNING ACTIVITY** even though the **Start Date** may not have been reached. It is RUNNING so far as the Teacher-Facilitator is concerned., enabling you to undertake several management activities explained in [Section 3. Manage the Peer Assessment Activity]

Peer Assess Pro Teacher's Dashboard



Invite team members to respond and other automated activities

When the **Start Date** occurs, Peer Assess Pro **automates** several activities:

- A **peer assessment survey is composed,** unique for every team and every student.
- **Only once the Start Date** is reached the **survey is available** for students' access through the **Activity-Specific Participant URL**
- An **email** is sent to all Team Members requesting them to complete the peer assessment survey before the **Due Date**. The **Activity-Specific Participant URL** is included in the email.
- The Activity's status will be listed as a **RUNNING ACTIVITY** in the HOME and ACTIVITIES pages of Xorro.
- The **Xorro Team Survey app** begins to collect students' responses to the survey, conveying the responses to the Peer Assess Pro database and report analyser.

A unique peer assessment survey is created for every team and team member

Quick links and related information

FAQ: How do I find the the Peer Assess Pro Teacher's dashboard?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FAQ: How do I view and experience what the students experience?

FAQ: How do I correct the Team Composition in a running peer assessment activity?

FAQ: How do I view a list of the participants (team members) in the group I uploaded?

2.4 Use a Teamset Group to launch a peer assessment

This is an alternative approach to launching a peer assessment activity. This is a two stage process where you can

- Upload a **TeamSet CSV** creating one or more **TeamSet Groups**
- Launch a Peer Assessment activity during which you
- Select the previously-imported TeamSet Group, then
- Create the Peer Assessment activity.

From the Xorro HOME page select the PARTICIPANTS page

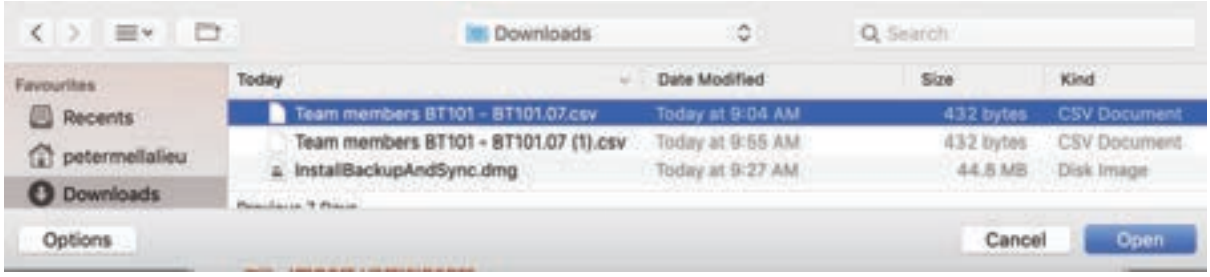
(Image to come)

Select 'Import Participants'

This uploads your Teamset CSV within which you have classified your students into teams, as detailed in Section 2.2 Create the peer assessment teamset CSV file

Note that **multiple teamset groups** may be created using this import process. This is potentially useful for managing peer assessment in large, multi-stream classes.

Browse to your Team Members Group CSV file



Load, check and confirm correct team membership, then Import

You should see a list of all the students belonging to the class for whom you wish to run the peer assessment activity.

Note: The message **'Exists'** or **'Conflict'** means that the id (Identification) code has already been identified within your institution, or a previous Group you have uploaded. Carry on!

Import Participants

Participants

7 participants (7 conflicts)

Status	Identification	First Name	Last Name	Group Codes
Exists	1421341350	Karl	MARC	BT101
Exists	1421341238	Quinten	CRISP	BT101
Exists	1421343132	Ritchie	CHOR	BT101
Exists	1421340370	Sandy	SHORE	BT101
Exists	1421341330	Bridget	GNOME	BT101
Exists	1421342883	Julian	COLANDAR	BT101
Exists	1421342262	Lydia	LOADED	BT101

Cancel Import

Check class and team membership

At this point you are unable to confirm the team membership of your team class. You must first launch a peer assessment activity selecting (one of) the Group Codes that existed within the original Teamset CSV.

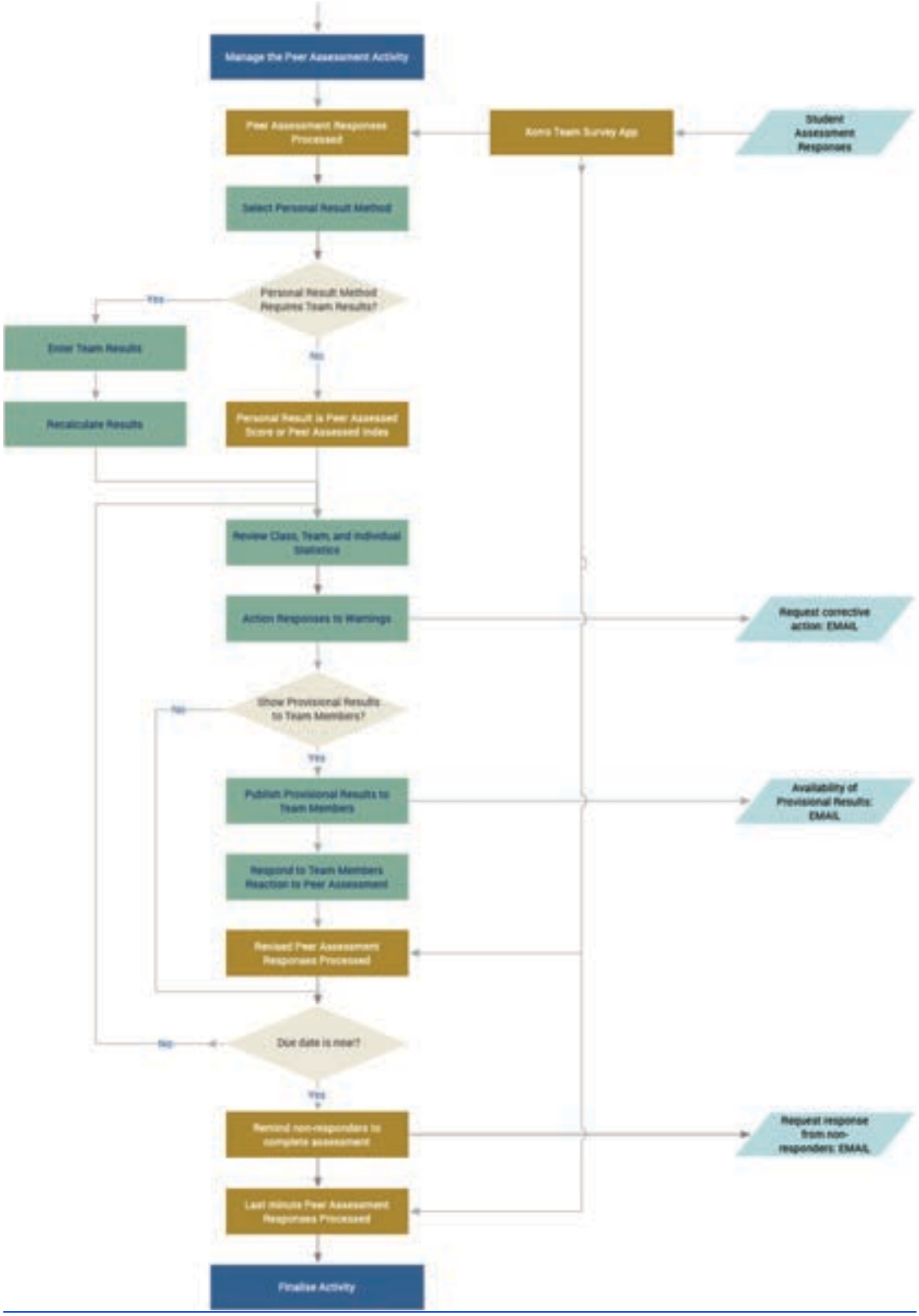
Quick links and related information

FAQ: How do I view a list of the participants (team members) in the group I uploaded?

FAQ: How do I view or change the participants (team members) in a group I uploaded?

FAQ: How do I correct the Team Composition in a running peer assessment activity?

3. Manage the Peer Assessment Activity



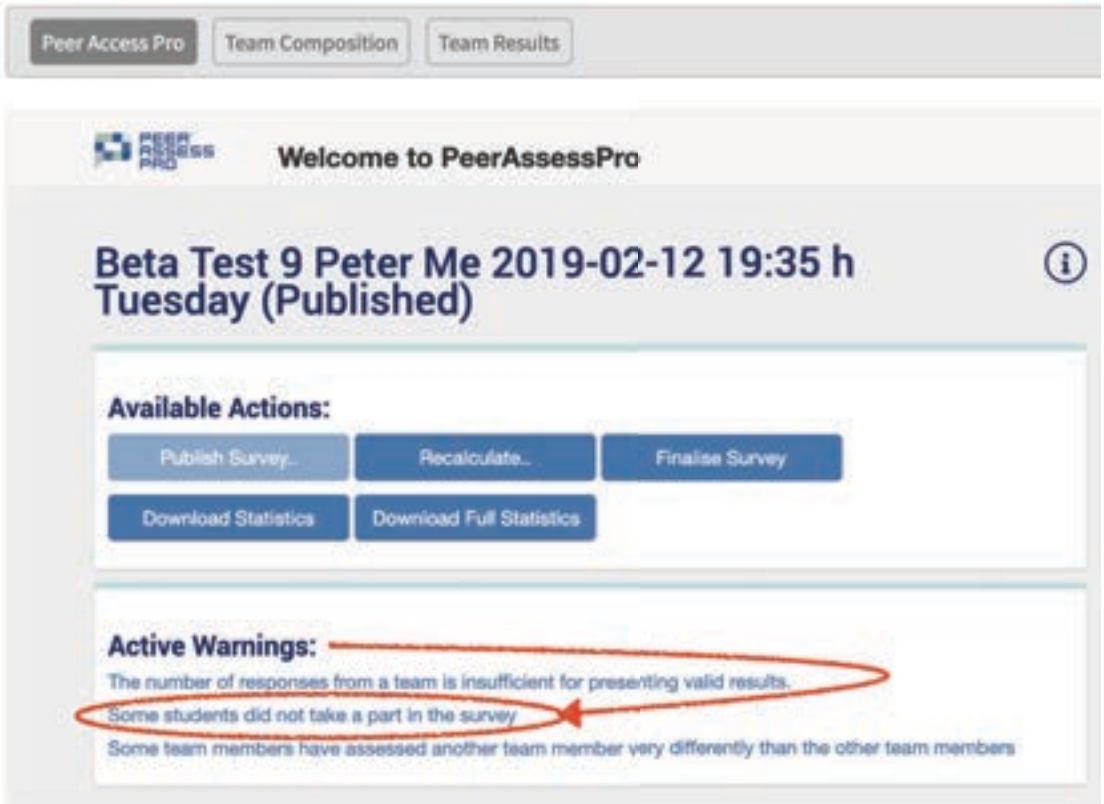
3.1 Action responses to warnings

Active Warnings show when you need to take action to remedy an issue during execution of the peer assessment activity.

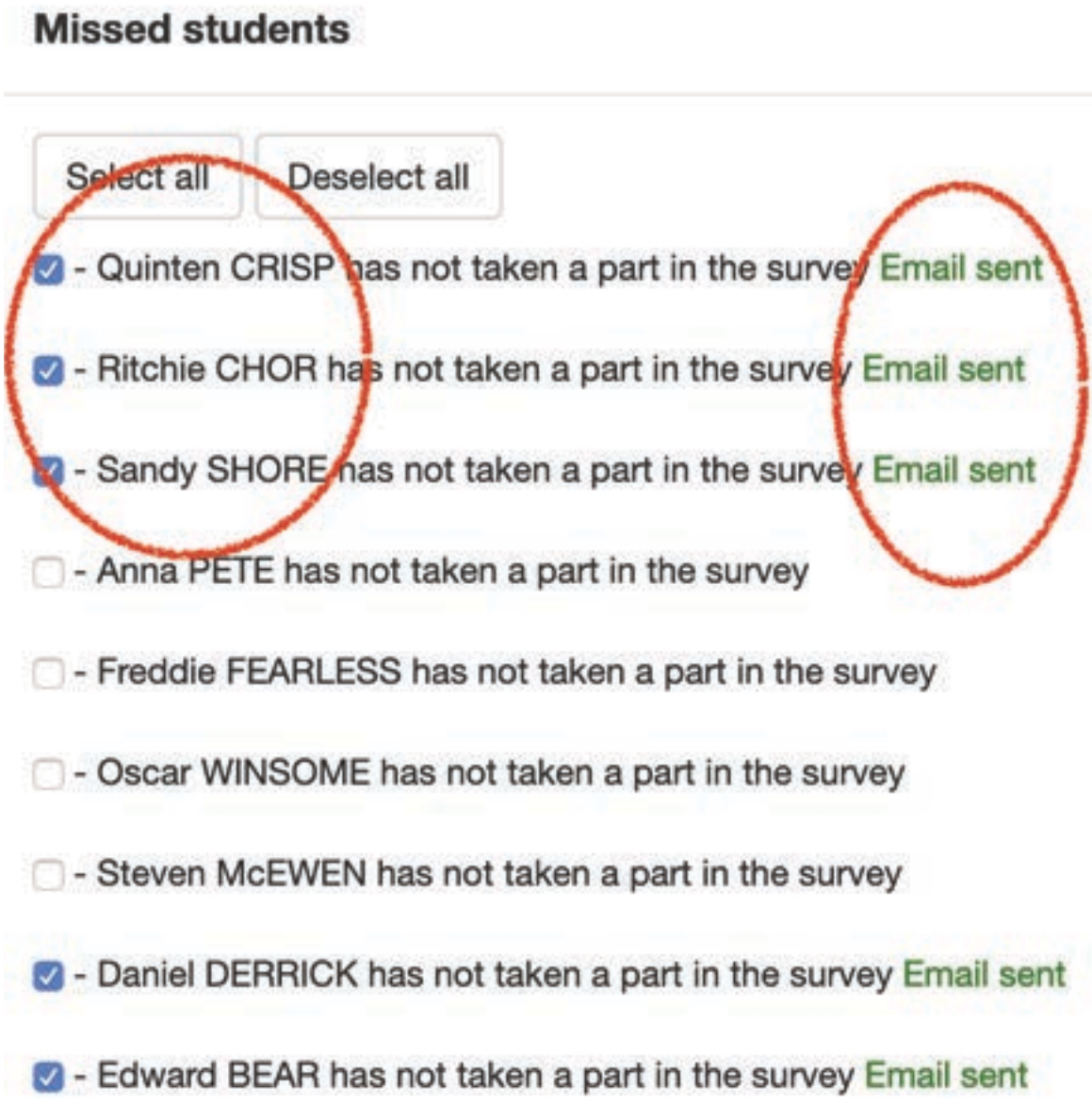
Every email is copied to the email account you used to register for Xorro Peer Assess Pro.

In the following example, one member of Team Brazilia has completed the assessment of their four team members. Consequently, a warning is generated for Team Brazilia that the number of responses from the team is insufficient for presenting valid results. In contrast, all four team members of Team Kublas have completed the assessment.

The warnings displayed in this case are



Click through the warning to gain advice on how to remedy the situation. For example, you can remind the students to complete the survey. Emails are automatically generated and sent on your behalf to all or selected students.



Adjusting team composition

Upon commencing the peer assessment survey, team members are asked first to confirm that the team members identified or their team are correct. If not, the student initiates a request notification to the teacher to readjust their team's membership.

Once the peer assessment activity has been launched, you can only modify the team composition as per the following FAQ. Changes to the Xorro Group will have NO EFFECT on a currently running activity, unless you cancel the activity. Then re-launch a new activity with the revised Group. This is an extreme response, and should not generally be required, if you follow the following FAQ.

Quick links and related information

FAQ: How do I correct the Team Composition in a running peer assessment activity?

FAQ: How do I take action on the Warnings presented in the Peer Assess Pro™ Teacher's Dashboard?' What if I ignore the Warnings?

3.2 Automated and manual notifications

Students who have NOT completed the survey are sent an email reminder 72 hours, 24 hours and 12 hours before the Due Date.

Similarly, if a student is required to resubmit a response because a team has been reconstituted, an automatic reminder is sent.

Quick links and related information

FAQ: What is the content of emails sent by Peer Assess Pro?

3.3 Enter Team Results

The Team Results for each team must be entered should you intend to select any of these methods to calculate the Personal Result.

- Indexed Personal Result
- Normalised Personal Result
- Rank Based Personal Result

You can later revise the Team Results anytime before you publish the results to your students.

Whenever you enter or revise Team Results, you may select the **Publish** or '**Update**' button to update and communicate the revised Personal Results to your class.

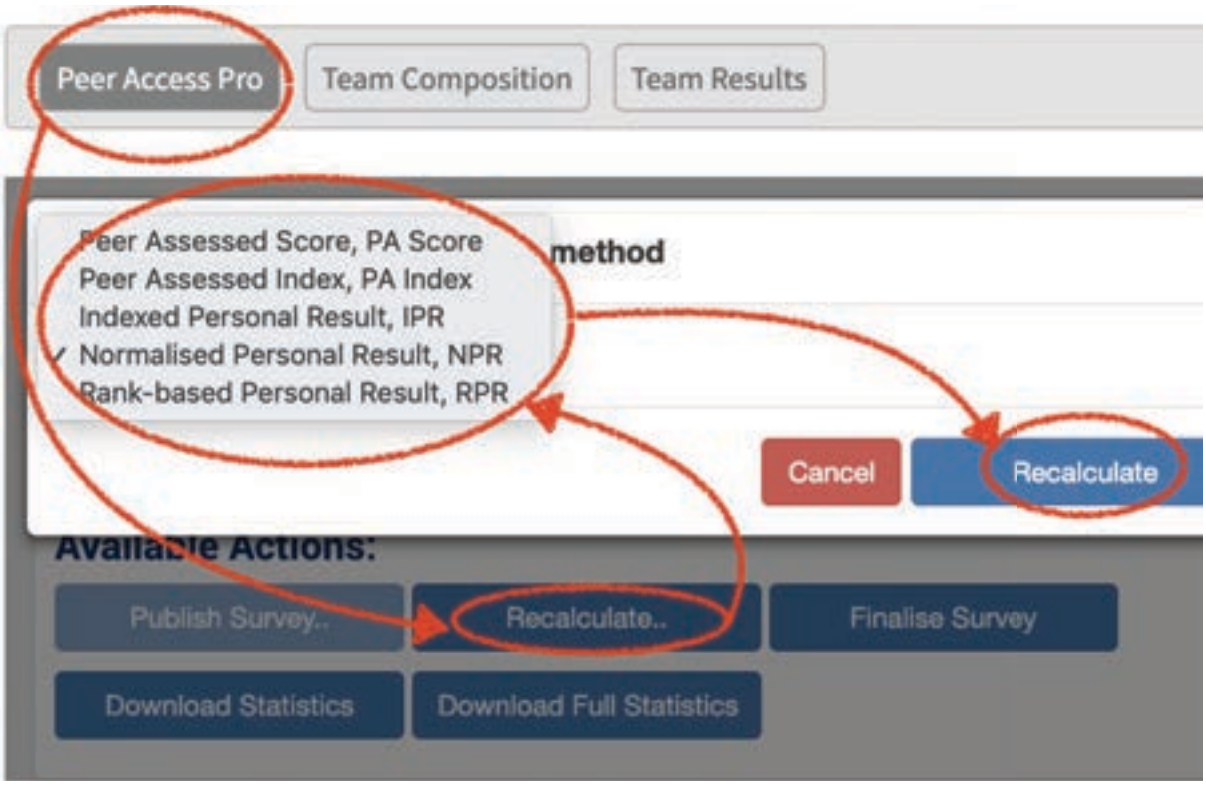
Team Results are not used to calculate:

- Peer Assessed Score (Formerly Team Based Learning Score)
- Peer Assessed Index (Formerly Indexed Team Based Learning Score)

3.4 Select the Personal Result Calculation Method

This is the method you choose to calculate the Personal Result you will award to each team member.

- Select 'Recalculate' button from Available Actions
- Select the Calculation Method from the dropdown menu
- Confirm 'Recalculate'



Quick links and related information

[FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?]

3.5 Review class, team, and individual statistics

You can explore progress and final results at the class, team, and individual level.

Review Class Results

In the **Class Results**, select a **Bucket Range** to identify the specific students lying within the range of a histogram bar chart.

Before reviewing results, see:

[FAQ: When, why, and how do I 'Recalculate Results'?]

Example class statistics

In any of the tables, you may

- **Sort** the table by clicking on the header for each column in the table
- **Select and view a personal snapshot** of the peer feedback report that will be made available to a specific student when you Publish or Update the results.

Good practice hint: How to identify at risk students

- Select Peer Assessed Score (PA Score)as the statistic for showing in Class Results
- Sort the table ascending by PA Score
- Interrogate the Individual Personal Snapshots of the lowest rating students.

The Individual Personal Snapshot

(To come)

Example Individual Personal Snapshot

(To come)

Four possible views of the Individual Personal Snapshot

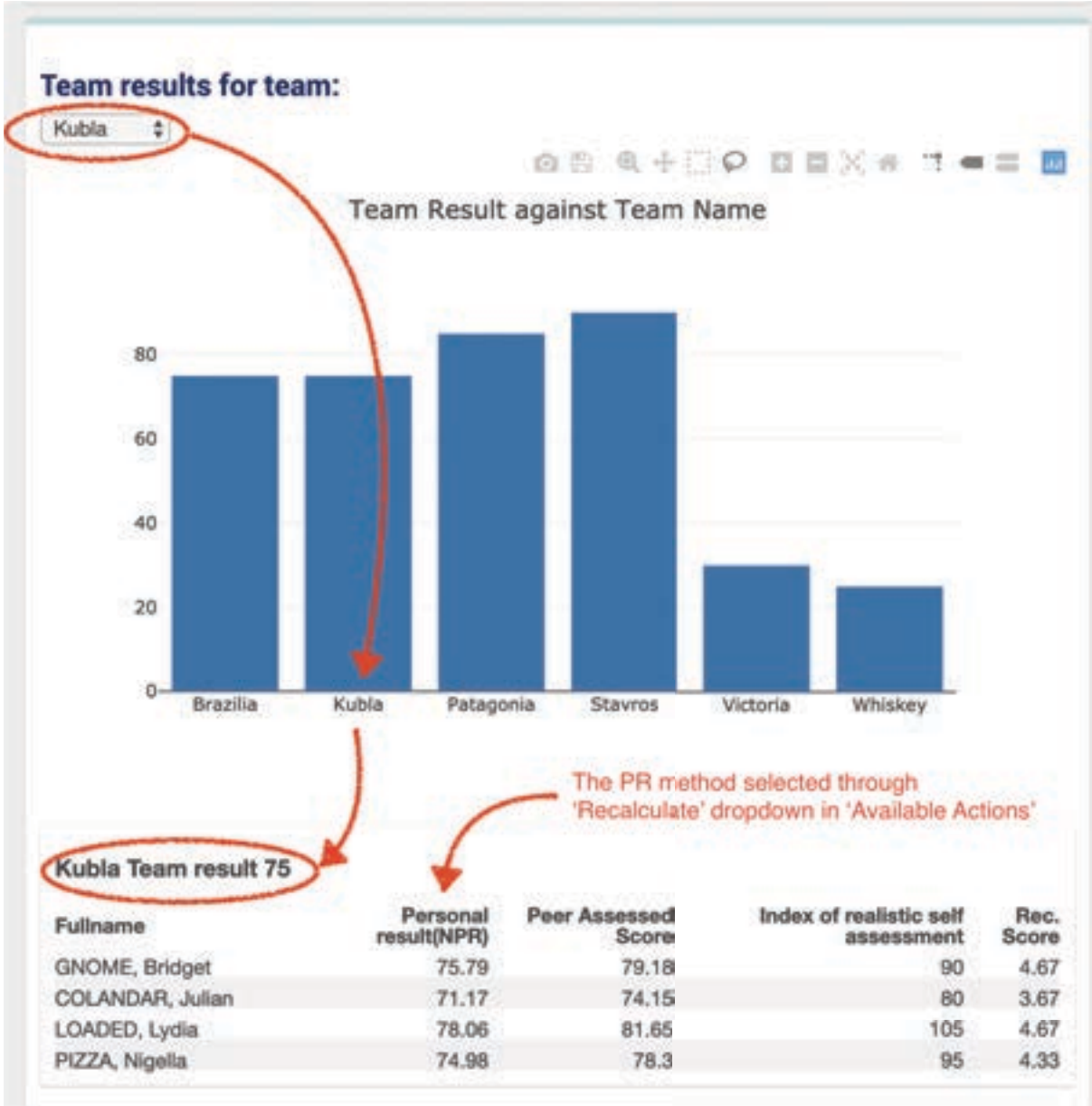
Note there are four possible views of an Individual Personal Snapshot.

1. **Published to the Student.** The view you may have already **Published to the Student**, and available for their view. This snapshot includes qualitative feedback 'who said what' in **anonymised form, just as the student would see the report**
2. **Teacher's Published view**. A view that similar to the view that is **Published to the Student**, and available for their view. Furthermore, this snapshot includes qualitative feedback in a transparent form. You can view specifically
    - 'who said what' by team member name
    - the individual ratings of the student by their team members
    - all Active Warnings pertaining to that student and their team.
3. **Student' Live View**. The view not yet made available to the student, but what the student would view once the current results are Published or Updated.
4. **Teacher's Live view. A view similar to the Teacher's Published view**, but showing the feedback the student would view (but anonymised) once the current (live) results are Published or Updated.

Team Statistics

Select an individual team to probe the results of its team members. Sort by Peer Assessed Score or Index of Realistic Self Assessment. Then you can quickly review the Individual Personal Snapshot of each team member as part of your diagnosis to identify 'star performers' , 'at risk' team members, and those with outlier degrees of over confidence or underconfidence.

Example Team Statistics



Fullname	Personal result(NPR)	Peer Assessed Score	Index of realistic self assessment	Rec. Score
GNOME, Bridget	75.79	79.18	90	4.67
COLANDAR, Julian	71.17	74.15	80	3.67
LOADED, Lydia	78.06	81.65	105	4.67
PIZZA, Nigella	74.98	78.3	95	4.33

Qualitative Feedback

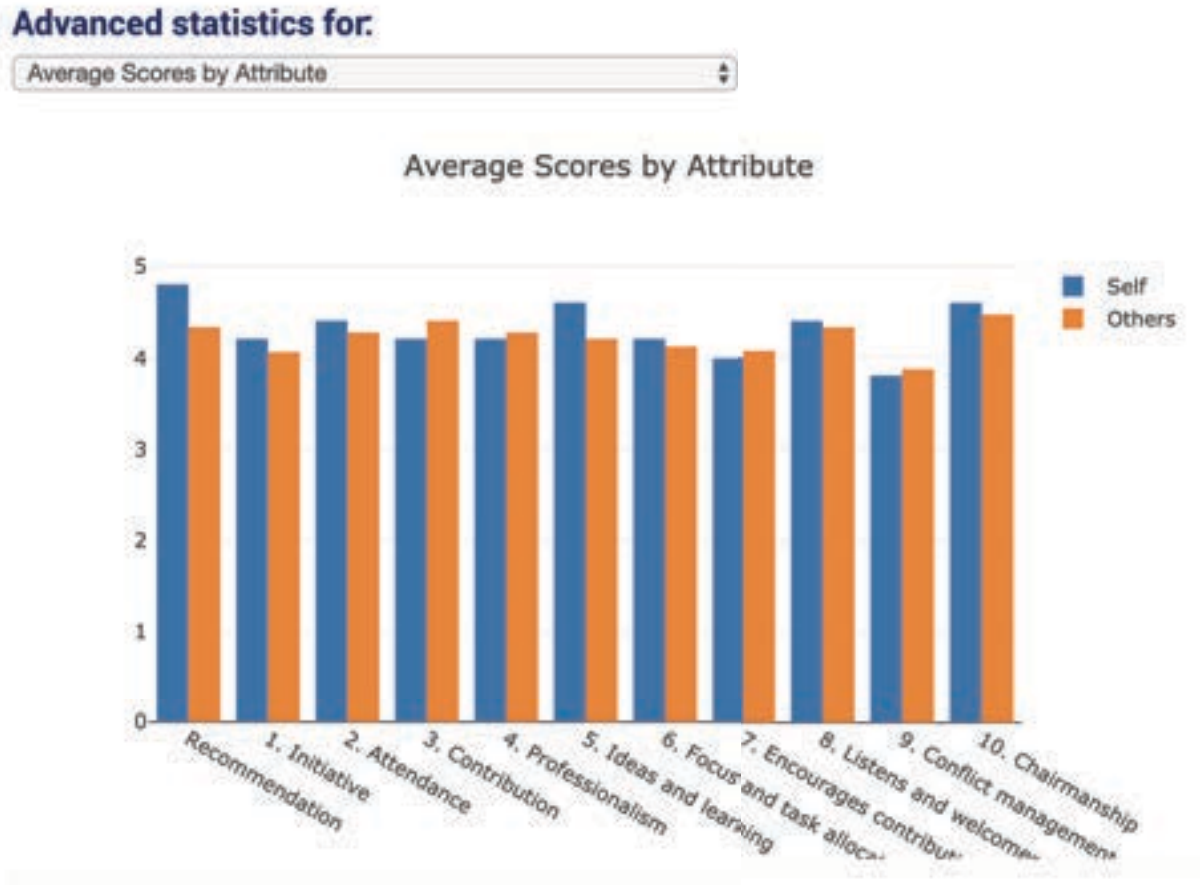
(To come)

Teacher's Feedback

(To come)

Advanced Statistics

There are many advanced statistics and charts you can view. Furthermore, from **'Available Actions'** you can **Download Full Statistics** to conduct more detailed investigations beyond the scope of what we have conceived.



Quick links and related information

[FAQ: How is the Index of Realistic Self Assessment (IRSA) calculated?]

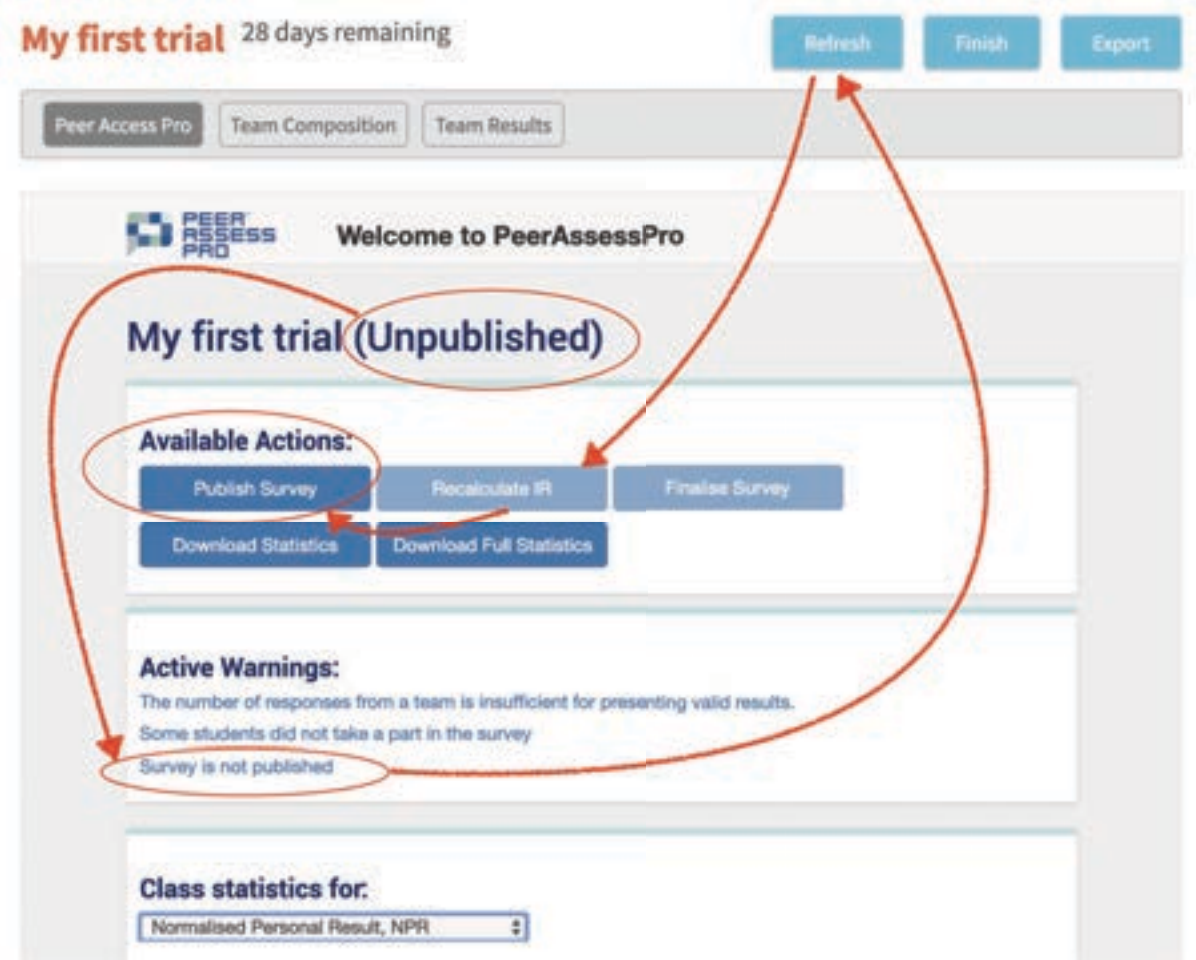
3.6 Publish provisional Personal Results to team members

Results of the peer assessment are hidden from team members until you initiate **Publish Survey** on the Peer Assess Pro Teacher's dashboard.

Before Publishing, see:

[FAQ: When, why, and how do I 'Recalculate Results'?]

Unpublished status



Published status

- Select **'Refresh'** to ensure recent assessment submissions collected by Xorro are incorporated into the Peer Assess Pro database.
- Select **Recalculate** to ensure changes to Team Results are incorporated into calculations of students' results.
- Select **Publish Survey**

The foregoing '**Refresh and Recalculate**' steps provide you with the opportunity to quality review results before publishing and republishing personal results and qualitative peer feedback comments. In short, as the peer assessment activity progresses towards the due date, results ARE NOT automatically updated and made available for viewing by the students.

Take Care! Once an activity is Published, the results can never be unpublished. However, you may re-publish results if new responses are submitted and/or you make adjustments to Team Results, Team Composition, etc. To reiterate, even if interim results have been published to students, as the peer assessment activity continues to progress towards the due date, results ARE NOT automatically updated and made available for viewing by the students.

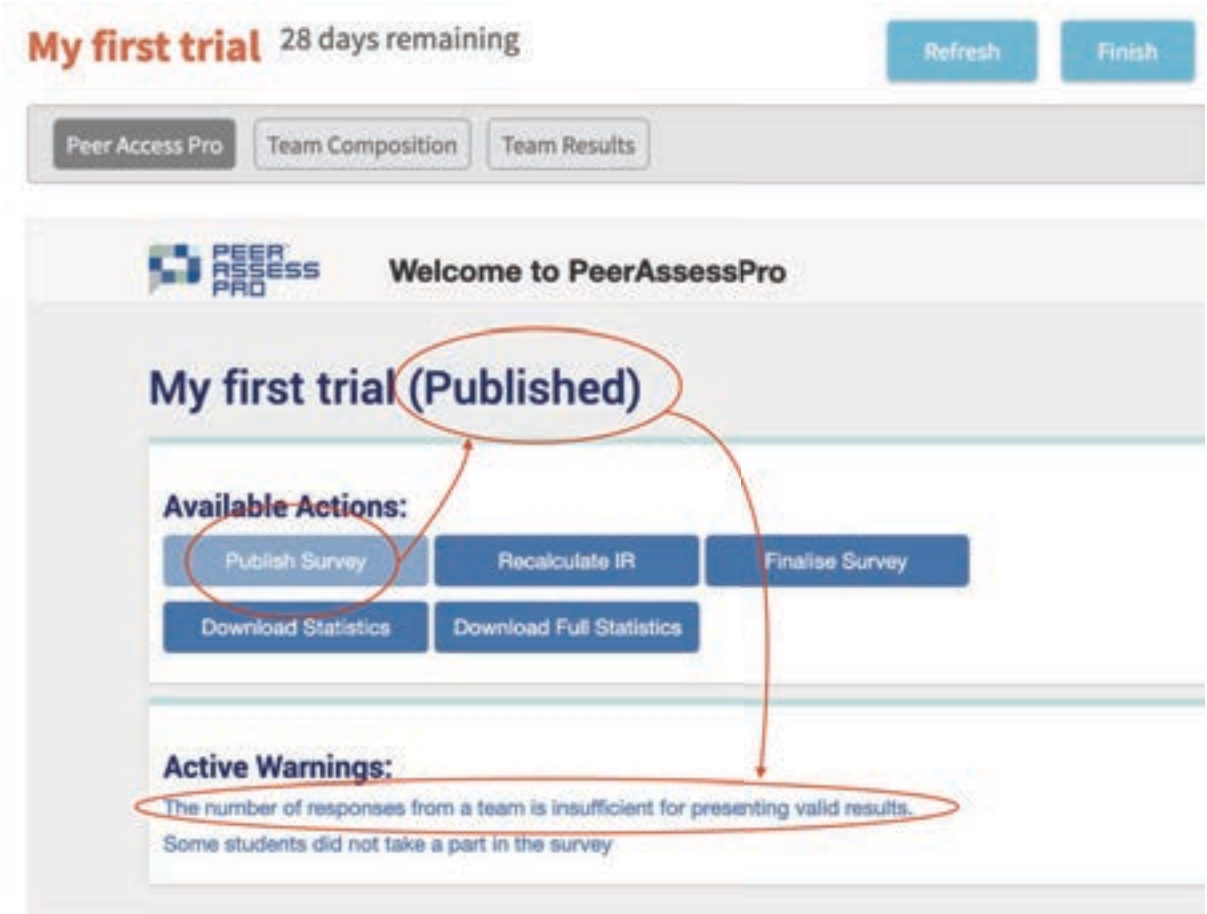
Results hidden when insufficient responses

Results will be hidden from the teacher and ALL team member in teams **where less than one-half** of team members have submitted the peer assessment. Peer assessment results are possibly not valid and representative at this stage of the survey activity processing. For small teams, at least 3 team members must have submitted a response. That is, team sizes of 3, 4, 5 and 6 team members require at least three team members to have peer assessed each other. A team of 7 or 8 requires a minimum of 4 responses. Team members who have already submitted a response will ALSO be advised their results are hidden until more of their team members have submitted responses.

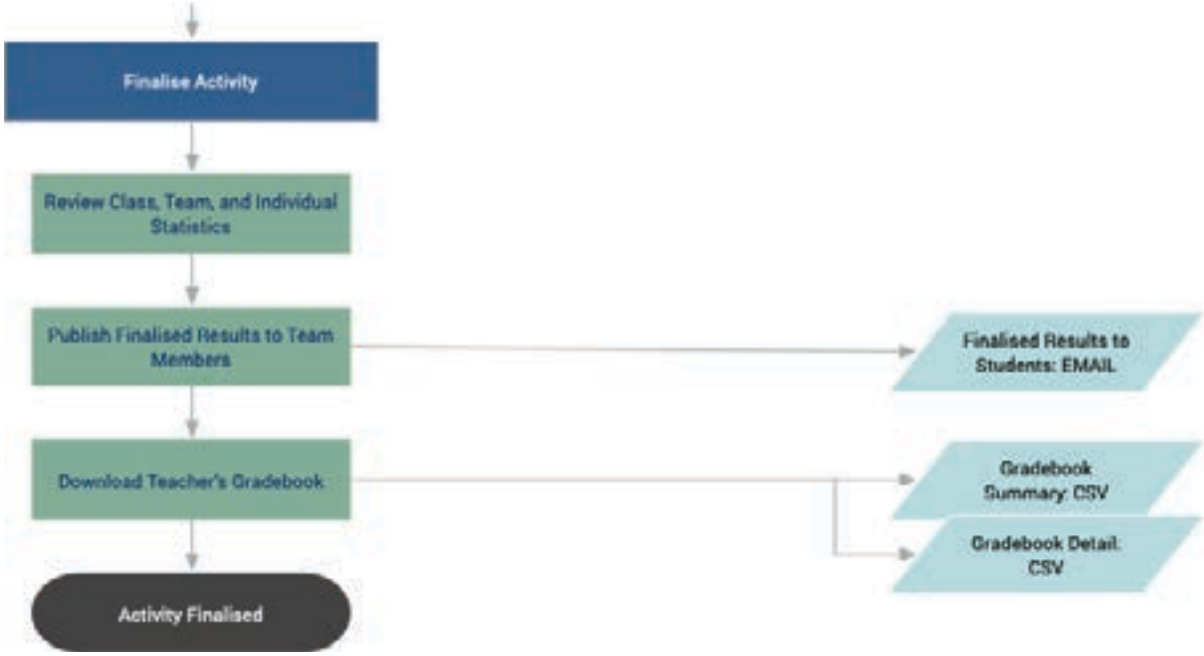
Quick links and related information

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FAQ: How do I view and experience what the students experience?


My first trial
28 days remaining
Refresh
Finish
Peer Access Pro
Team Composition
Team Results
PEER ASSESS PRO
Welcome to PeerAssessPro
My first trial (Published)
Available Actions:
Publish Survey
Recalculate IR
Finalise Survey
Download Statistics
Download Full Statistics
Active Warnings:
The number of responses from a team is insufficient for presenting valid results.
Some students did not take a part in the survey

4. Finalise the peer assessment activity



4.1 Why Finalise?

Survey responses from Team Members are received and available for incorporation into the Peer Assessment activity UNTIL the you explicitly **Finalise the Survey**. Even responses submitted after the Due Date announced to students, at the launch of the Activity, will be available for incorporation UNTIL the survey is **Finalised deliberately by the Teacher**. Until Finalisation, you can request a student to reconsider. They will then optionally resubmit their responses.

4.2 Publish Finalised Results to students

- Check, resolve, or ignore Active Warnings.
- Refresh and Recalculate.
- Check again before Finalising publishing
- Publish Survey to make available latest, final results to team members.

4.3 Download Teacher's Gradebook of Results

From the Peer Assess Pro Teacher's Dashboard, select either

- **Download Statistics** - for a summary of the gradebook, by student name, id, Personal Result
- **Download Full Statistics** - for a complete breakdown of the components scores for each student, all personal result possibilities, and IRSA.
- **Conduct a quick check of these results** before you complete the next step, Finalise!

Example Gradebook Summary Statistics

id	first	last	team	team_result	personal_result
1421341350	MARC	Karl	Brazilia	75	23.2
1421341238	CRISP	Quinten	Brazilia	75	90.3
1421343132	CHOR	Ritchie	Brazilia	75	88.3
1421340370	SHORE	Sandy	Brazilia	75	98.2
1421341330	GNOME	Bridget	Kubla	75	75.8
1421342883	COLANDAR	Julian	Kubla	75	71.2
1421342262	LOADED	Lydia	Kubla	75	78.1
1421345122	PIZZA	Nigella	Kubla	75	75.0

Example Gradebook Full Statistics

id	first	last	email	team	team_result	p_rec	p_initiative	self_pa	pa	irsa	alc	atc	pa index	ipr	npr	rpr
1421341350	Karl	MARC	karl@nowhere.ac	Brazilia	75	0.0	0.0	67.5	0.0	0.0	0.0	0.0	-3.0	75.0	23.2	30
1421341238	Quinten	CRISP	quinten@nowhere.ac	Brazilia	75	4.0	4.0	0.0	85.0	0.0	4.4	4.4	89.5	67.1	90.3	90
1421343132	Ritchie	CHOR	ritchie@nowhere.ac	Brazilia	75	4.0	4.0	0.0	82.5	0.0	4.4	4.2	86.8	65.1	88.3	60
1421340370	Sandy	SHORE	sandy@nowhere.ac	Brazilia	75	5.0	5.0	0.0	95.0	0.0	4.6	5.0	100.0	75.0	98.2	100
1421341330	Bridget	GNOME	bridget@nowhere.ac	Kubla	75	4.7	4.0	87.5	79.2	90.0	4.1	4.2	97.0	72.7	75.8	90
1421342883	Julian	COLANDAR	julian@nowhere.ac	Kubla	75	3.7	3.7	92.5	74.2	80.0	4.0	3.9	90.8	68.1	71.2	30
1421342262	Lydia	LOADED	lydia@nowhere.ac	Kubla	75	4.7	4.0	77.5	81.7	105.0	4.3	4.3	100.0	75.0	78.1	100
1421345122	Nigella	PIZZA	nigella@nowhere.ac	Kubla	75	4.3	4.3	82.5	78.3	95.0	4.0	4.3	95.9	71.9	75.0	60

4.4 Finalise the Activity … irrevocably!

- **CRITICAL WARNING:** From this point the Teacher can make NO FURTHER adjustments to Team Results, Team Composition, or Calculation Method. No further responses will be accepted.
- Select '**Finalise Survey**'.
- Students will be advised that their finalised results are available to review from their personal Xorro Dashboard
- Results are available for the student's view for upto two weeks following Finalisation.
- Two weeks after Finalisation the state of the peer assessment activity changes from being a RUNNING ACTIVITY to an expired RECENT ACTIVITY. On the Xorro ACTIVITIES page, the ACTIVITY is now listed in RECENT ACTIVITIES. Students can no longer view the results of an (expired) RECENT ACTIVITY.
- The responses and responses of the activity are archived permanently in the Teacher's Recent Activities schedule on Xorro.
- The Teacher may continue to download the Gradebook results and Qualitative reports after Finalisation and Expiration.

Quick links and related information

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FREQUENTLY ASKED QUESTIONS

Quick Link Map

Everyone	For teachers	For team members
Xorro-Q help	Login to Xorro-Q	Join peer assessment activity
www.peerassesspro.com	The peer assessment survey	The purpose of peer assessment
Table of contents: Reference guide	Login and orientation	Undertake the peer assessment
FAQs on the web at http://tinyurl.com/papFAQ	Launch peer assessment activity	Use peer assessment results for better performance
Videos	Manage the peer assessment activity	
Quickstart guide for teachers	Definitions, calculations, and examples	
Contact us	Miscellaneous	

FAQs for teachers

Quickstart Guide for teachers

The peer assessment survey

Login and orientation

Launch peer assessment activity

Manage the peer assessment activity

Definitions, calculations, and examples

Miscellaneous

The peer assessment survey

FAQ: What is the purpose of peer assessment?

FAQ: What questions are asked in the peer assessment survey?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: Is the self-assessment used to calculate Peer Assessed Score?

Login and orientation

FAQ: Give me a quick overview of how to launch a Peer Assess Pro™ activity through Xorro

FAQ: How do I navigate the PARTICIPANTS page for Peer Assess Pro?

FAQ: How do I view and experience what the students experience?

FAQ: How do I view a demonstration version of Xorro Peer Assess Pro?

Launch peer assessment activity

FAQ: How do I create a CSV file from a Google Sheet?

FAQ: Can I create a peer assessment activity without having all my teams correctly identified by team name and/or team membership?

FAQ: How do I correct the participants (team members) in a group already uploaded to Xorro?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

Manage the peer assessment activity

FAQ: How do I correct the Team Composition in a running peer assessment activity?

FAQ: How do I take action on the Warnings presented in the Peer Assess Pro™ Teacher's Dashboard?' What if I ignore the Warnings?

FAQ: What is the content of emails sent by Peer Assess Pro?

FAQ: What is a valid assessed team?

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: When, why, and how do I 'Update and Recalculate Results'?

FAQ: How is an outlier peer assessment rating identified?

Definitions, calculations, and examples

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: Is the self-assessment used to calculate Peer Assessed Score?

FAQ: How is the Peer Assessed Index (PA Index) calculated?

FAQ: How is the Indexed Personal Result (IPR) calculated?

FAQ: How is the Normalised Personal Result (NPR) calculated?

FAQ: How is the Rank Based Personal Result (RPR) calculated?

FAQ: How is Standard Peer Assessed Score (SPAS) calculated?

FAQ: What is Employability? How is it calculated?

FAQ: How is the Index of Realistic Self Assessment (IRSA) calculated?

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

Miscellaneous

FAQ: Where may I view the most recent version of the user guides?

FAQ: What is the content of emails sent by Peer Assess Pro?

FAQ: Why are different terms used to display peer assessment results in the Xorro and previous Google versions of Peer Assess Pro™?

FAQ: What are the design objectives, key features, and benefits of the Xorro Peer Assess Pro development?

FAQ: How do I contact people at Peer Assess Pro?

FAQs for team members

The purpose of peer assessment

Undertaking the peer assessment

Using peer assessment results for better performance

How peer assessment affects personal results

The purpose of peer assessment

FAQ: What is the purpose of peer assessment?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

Undertaking the peer assessment

FAQ: What questions are asked in the peer assessment survey?

FAQ: When and how is the peer assessment conducted?

FAQ: How do I provide useful feedback to my team members?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FAQ: How do I view and experience what the students experience?

FAQ: Is the self-assessment used to calculate Peer Assessed Score?

FAQ: What happens if I try to 'game' (fool? play? disrupt?) the peer assessment process?

Using the results from peer assessment for better performance

FAQ: How do I interpret the feedback results I've received from the peer assessment?

FAQ: How do I interpret measures of realistic self-assessment?

FAQ: What steps can I take to get a better personal result?

FAQ: Is the self-assessment used to calculate Peer Assessed Score?

FAQ: What is Employability? How is it calculated?

FAQ: I don't understand what my teammates are trying to tell me. How do I ask for better feedback?

FAQ: I believe I have been unfairly treated by the results of the peer assessment. How do I address my concern?

How peer assessment affects personal results

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: What steps can I take to get a better personal result?

FAQ: What happens if I try to 'game' (fool? play? disrupt?) the peer assessment process?

FAQ: Is the self-assessment used to calculate Peer Assessed Score?

FAQ: What is the purpose of peer assessment?

Defining peer assessment

Peer assessment is an educational activity in which students judge the performance of their peers, typically their teammates. Peer assessment takes several forms including

- **Summative**, where the peer assessment is used to determine a team member's academic grade or personal result
- **Formative**, where the peer assessment provides feedback that a team member can use to improve their contribution to the future work of a team in which they are working

Developmental feedback

The ability to **give** and **receive** constructive feedback is an essential skill for team members, leaders, and managers.

Consequently, your teacher has chosen to use Peer Assess Pro™ to help you provide **developmental feedback** to your team members, for both formative and/or summative purposes.

The goal of developmental feedback is to highlight both positive aspects of performance plus areas for performance improvement. The result of feedback is to increase both individual and team performance (Carr, Herman, Keldsen, Miller, & Wakefield, 2005).

Determination of course personal result

Additionally, your teacher may use the quantitative results calculated by Peer Assess Pro™ to determine your Personal Result for the team work conducted by your team. Your Personal Result may contribute to the final (summative) assessment grade you gain for the course in which Peer Assess Pro™ is applied.

In general, your Personal Result is calculated from two factors:

- **Team Result,** the overall mark your team earns from its team project outputs, such as reports and presentations
- **Peer Assessed Score**, a measure of the relative contribution your team members assess that you have made to the team's delivered outputs, teamwork processes, and/or leadership of the team.

Criteria for peer assessment in Peer Assess Pro™

There are many possible criteria for assessing your contribution to your team's work. Peer Assess Pro has chosen to place equal weight on two groups of factors based on a well-established instrument devised by Deacon Carr, Herman, Keldsen, Miller, & Wakefield (2005), Task Accomplishment, and Contribution to Leadership and team processes:

- **Task Accomplishment**: Contributions you make directly to help the team accomplish its task, such as showing initiative, professionalism, contributing ideas, helping other team members learn relevant concepts, and making well-prepared on-time contributions to meetings and team deliverables
- **Leadership and Team Processes.** Contributions such as focussing the team on priorities, encouraging and welcoming the contributions of others, managing conflict, and chairing meetings productively.

Peer Assess Pro assesses competencies valued by employers

The selection of the criteria used in the Peer Assess Pro is reinforced by the results from a recent survey that asked employers to rate the importance of several competencies they expected to see in new graduates from higher education. The figure shows that teamwork, collaboration, professionalism, and oral communications rate amongst the most highly needed Career Readiness' Competencies (CRCs) sought by employers. All these CRC competencies rate at least as 'Essential', with Teamwork and Collaboration rating almost Absolutely Essential (National Association of Colleges and Employers), 2018).

Employers rate their essential need for Career Readiness Competencies

Competencies	Weighted Average Rating*
Critical Thinking/Problem Solving	4.66
Teamwork/Collaboration	4.48
Professionalism/Work Ethic	4.41
Oral/Written Communications	4.30
Digital Technology	3.84
Leadership	3.65
Career Management	3.38
Global/Multi-cultural Fluency	2.78

*5-point scale, where 1=Not essential, 2=Not very essential, 3=Somewhat essential, 4=Essential, 5=Absolutely essential

Source: National Association of Colleges and Employers (NACE). (2018). Figure 42, p. 33.

Quick links and related information

FAQ: What questions are asked in the peer assessment survey?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: How is the Peer Assessed (PA) Score calculated?

References

Deacon Carr, S., Herman, E. D., Keldsen, S. Z., Miller, J. G., & Wakefield, P. A. (2005). Peer feedback. In *The Team Learning Assistant Workbook.* New York: McGraw Hill Irwin.

National Association of Colleges and Employers (NACE). (2018). Job Outlook 2019. Bethlehem, PA. https://www.naceweb.org/

FAQ: When and how is the peer assessment conducted?

The best practice for conducting peer assessment in an academic course follows several stages.

1. **Introduction.** The teacher introduces the team activity and related course assignments
2. **Peer assessment purpose.** The teacher explains the role, purpose, and process of peer assessment
3. **The team activity commences**
4. **A formative peer assessment** is conducted using Peer Assess Pro™ early or mid-way through the team activity.
5. **Team members receive formative feedback** generated by Peer Assess Pro™ that indicates their provisional peer assessment rating and (optionally) their indicative end of class personal result. More importantly, they receive qualitative information that provides guidance on what behaviors are required to improve their contribution towards the results the team is seeking.
6. **The team activity continues towards its conclusion.** Team members confirm informally with each other that they are correctly applying the more productive behaviours identified through the formative peer assessment.
7. **The team activity concludes.**
8. **The summative peer assessment** using Peer Assess Pro™ is conducted at the conclusion of the team activity and/or before the conclusion of the course.

Formative assessment: optional but valuable

The midpoint formative peer assessment is an optional element of peer assessment within the classroom. As a minimum, the formative peer assessment gives the team members experience of the Peer Assess Pro™ mechanism including the questions that will be used to conduct the final, summative peer assessment.

More importantly, the midpoint formative assessment helps ensure that team members have the opportunity to respond proactively to the peer feedback they receive generated immediately following the conclusion of the peer assessment activity. Through undertaking appropriate corrective action mid-way through the

course, team members have the opportunity to raise their peer assessment rating, their team's results, and, therefore, their end of course personal results.

No surprises!

The intention of formative assessment is that, ideally, a team member should face no surprises when they receive their final personal result and peer assessment feedback at the conclusion of the course. For instance, a free-riders should receive clear feedback that the rest of their team observes they are free-riding. Consequently, the free-rider should learn in a timely manner that they will be penalised at the concluding summative assessment unless they remediate their behaviour. It is equally important that an overachieving student who does most of the work is given timely feedback that they need to learn to involve and engage the other team members in the team's planning and execution of tasks. The Peer Assess Pro™ survey specifically targets these aspects of leadership and team process contributions, an this particular style of overachieving student should be identified through the peer assessment ratings they receive.

To minimise the risk of surprises, it is important, therefore, that the peer assessment you provide to your team members at the midpoint of a team activity is

- Fair, accurate, and honest
- Supported by qualitative feedback that supports the peer assessment ratings you provided in the Peer Assess Pro™ survey
- Reinforced by specific, actionable advice to the assessed team member about what behaviours they must undertake to improve their contribution to either the team's outputs, or the team's leadership and group processes.

Quick links and related information

FAQ: What questions are asked in the peer assessment survey?

FAQ: How do I provide useful feedback to my team members?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FAQ: How do I view and experience what the students experience?

FAQ: How do I interpret the feedback results I've received from the peer assessment?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: Is the self-assessment used to calculate Peer Assessed Score?

FAQ: How do I provide useful feedback to my team members?

It is essential that the peer assessment a team member provides to their team members through peer assessment is:

- Fair, accurate, and honest
- Supported by qualitative feedback that supports the peer assessment ratings provided in the Peer Assess Pro™ survey
- Reinforced by specific, actionable advice to the assessed team member about what behaviours they must undertake to improve their contribution to either the team's outputs, or the team's leadership and group processes.

Ohland et al (2012) provide a table of Behaviorally Anchored Ratings covering high and low contributions to team effectiveness. The table provides some guidance to team members about how they might give accurate, effective, and productive feedback to their team members through peer assessment.

Examples of high and low contributions to team effectiveness

HIGH		LOW
• Does more or higher quality work than expected. • Makes important contributions that improve the team's work. • Helps to complete the work of teammates who are having difficulty. • Completes a fair share of the team's work with acceptable quality.	**CONTRIBUTION**	• Does not do a fair share of the team's work. • Delivers sloppy or incomplete work. • Misses deadlines. Is late, unprepared, or absent for team meetings. • Does not assist teammates. Quits if the work becomes difficult.

• Asks for and shows an interest in teammates' ideas and contributions. • Improves communication among teammates. • Provides encouragement or enthusiasm to the team. • Asks teammates for feedback and uses their suggestions to improve. • Listens to teammates and respects their contributions. • Communicates clearly. • Shares information with teammates. • Participates fully in team activities. • Respects and responds to feedback from teammates.	**INTERACTION**	• Interrupts, ignores, bosses, or makes fun of teammates. • Takes actions that affect teammates without their input. • Does not share information. • Complains, makes excuses, or does not interact with teammates. • Accepts no help or advice.
• Watches conditions affecting the team and monitors the team's progress. • Makes sure that teammates are making appropriate progress. • Gives teammates specific, timely, and constructive feedback. • Notices changes that influence the team's success. • Knows what everyone on the team should be doing and notices problems. • Alerts teammates or suggests solutions when the team's success is threatened.	**KEEPING FOCUS**	• Is unaware of whether the team is meeting its goals. • Does not pay attention to teammates' progress. • Avoids discussing team problems, even when they are obvious.

• Demonstrates the knowledge, skills, and abilities to do excellent work. • Acquires new knowledge or skills to improve the team's performance. • Able to perform the role of any team member if necessary. • Has sufficient knowledge, skills, and abilities to contribute to the team's work. • Acquires knowledge or skills needed to meet requirements. • Able to perform some of the tasks normally done by other team members.	**CAPABLE**	• Missing basic qualifications needed to be a member of the team. • Unable to perform any of the duties of other team members. • Unable or unwilling to develop knowledge or skills to contribute to the team.

Source: Ohland et al., (2012)

Adapted by Mellalieu (2017) from Ohland, M. W., Loughry, M. L., Woehr, D. J., Bullard, L. G., Felder, R. M., Finelli, C. J., … Schmucker, D. G. (2012). APPENDIX B: Behaviorally Anchored Rating Scale (BARS) Version, from Comprehensive Assessment of Team Member Effectiveness. *Academy of Management Learning & Education*, *11*(4), 609–630. Retrieved from http://amle.aom.org/content/11/4/609.short

FAQ: I believe I have been unfairly treated by the results of the peer assessment. How do I address my concern?

(To be published)

FAQ: How do I interpret the feedback results I've received from the peer assessment?

(To be published)

Quick links and related information

FAQ: How do I interpret measures of realistic self-assessment?

FAQ: I don't understand what my teammates are trying to tell me. How do I ask for better feedback?

Begin by viewing this video. Watch especially for the question that is introduced soon after minute 15 by Harvard University professor Sheila Heen.

Heen, S. (2015). *How to use others' feedback to learn and grow*. TEDx. Retrieved from https://www.youtube.com/watch?v=FQNbaKkYk_Q

As Heen and Stone observe

> "Feedback is less likely to set off your emotional triggers if you request it and direct it. So don't wait until your annual performance review. Find opportunities to get bite-size pieces of coaching from a variety of people throughout the year. Don't invite criticism with a big, unfocused question like "Do you have any feedback for me?" Make the process more manageable by asking a colleague, a boss, or a direct report,
>
> **"What's one thing you see me doing (or failing to do) that holds me back?"**
>
> That person may name the first behavior that comes to mind or the most important one on his or her list. Either way, you'll get concrete information and can tease out more specifics at your own pace." (Heen & Stone, 2014)

Quick links and related information

Heen, S., & Stone, D. (2014). Find the Coaching in Criticism. *Harvard Business Review*, 9. Retrieved from https://medschool.duke.edu/sites/medschool.duke.edu/files/field/attachments/find-the-coaching-in-criticism.pdf

FAQ: What steps can I take to get a better personal result?

Your **Personal Result** is determined from a combination of your **Team Result** and your **Peer Assessed Score**. Consequently, to raise your Personal Result you need to apply balanced effort to raising both these contributing factors.

Raise your Team Result

Typically, your **Team Result** is earned from its assignment outputs, such as a report, and/or a presentation. Consequently, the grade for the Team Result is determined by the teacher, based on the rubric (marking guideline) they apply to assess your team's outputs. Ensure you understand the assignment elements and how each will be assessed. Seek out exemplars of good practice. Pursue the guidance found in:

> Mellalieu, P. (2013, March 15). *Creating The A Plus Assignment: A Project Management Approach* (Audio). Innovation & chaos ... in search of optimality website: http://pogus.tumblr.com/post/45403052813/this-audio-tutorial-helps-you-plan-out-the-time

Use your institution's academic support services

In addition to your teacher and their assistant tutors, your academic institution will offer personal and group coaching to guide you on the specific success factors related to the type of assignment you are pursuing. Schedule appointments to make use of these support facilities early in your project. Locate the online resources these coaching support services have curated for your guidance.

Raise your Peer Assessed Score

Group and team projects present special challenges of coordination, motivation, communication and and leadership. These challenges are normal! Furthermore, an essential part of your job as team member is to overcome proactively these challenges as part of your academic learning journey.

As you overcome these challenges you will achieve several benefits directly instrumental in raising your Personal Result:

- Your Team Result will increase
- Your team members will recognise that you have contributed to the team's success in raising its Team Result
- Your team members, therefore, will raise their peer assessment of your contribution. So, therefore,
- Your Peer Assessed Score will rise.

You will also develop team work and leadership competencies that will both raise your future employability, and your effectiveness in future teamwork, as discussed in:

FAQ: What is the purpose of peer assessment?

How do I address proactively the challenges of team work?

Whilst there are many resources to help address the challenges of team work in academic settings, we suggest you familiarise yourself with these resources early in your team project. Since "Any fool can learn from their own mistakes. It takes genius to learn from the mistakes of others" (Einstein), be proactive rather than foolish in learning effective team working skills from:

Turner, K., Ireland, L., Krenus, B., & Pointon, L. (2011). Collaborative learning: Working in groups. In *Essential Academic Skills* (2nd ed., pp. 193–217).

Carr, S. D., Herman, E. D., Keldsen, S. Z., Miller, J. G., & Wakefield, P. A. (2005). *The Team Learning Assistant Workbook*.

Learning constructively from mid-course peer assessment feedback

Good practice peer assessment management by your teacher will provide you with two opportunities for peer assessment and peer feedback through your course, formative and summative.

Your first, **mid-course, formative assessment** provides you with early advice about your strengths and opportunities for development as perceived by your team members. Make use of this formative feedback at the earliest opportunity as you proceed towards the conclusion of your team work, and your **final, summative peer assessment.** Usually, this final, summative assessment is where you earn the significant contribution to your course grade from the Personal Result earned from your Peer Assessed Score awarded by your team members.

Consequently, take proactive action following the mid-course formative assessment through referring to:

> FAQ: How do I interpret the feedback results I've received from the peer assessment?

Maybe you don't understand or don't agree with the feedback your teammates are providing. In that case, refer to

> FAQ: I don't understand what my teammates are trying to tell me. How do I ask for better feedback?

Quick links and related information

The purpose of peer assessment

FAQ: What is the purpose of peer assessment?

Undertaking the peer assessment

Using peer assessment results for better performance

How peer assessment affects personal results

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: What steps can I take to get a better personal result?

FAQ: What happens if I try to 'game' (fool? play? disrupt?) the peer assessment process?

FAQ: Is the self-assessment used to calculate Peer Assessed Score?

FAQ: What happens if I try to 'game' (fool? play? disrupt?) the peer assessment process?

(To be published)

Quick links and related information

FAQ: Give me a quick overview of how to launch a Peer Assess Pro™ activity through Xorro

- **Register** for a free Xorro Teacher's Account, at https://www.xorro.com/free_accounts/new
- **Login** to Xorro with your Xorro registration details - http://qf.xorro.com/
- **Create your class list as a csv file** containing your class list organised into teams. Use this example format - https://qf.xorro.com/participants/import_sample
- **Launch a peer assessment activity.** You will be presented with the option to import your CSV class list of teams - https://qf.xorro.com/pap/launches/new
- **Manage your peer assessment** activity by returning to - https://qf.xorro.com/activities/running

- If this is your first time using Peer Assess Pro, we recommend strongly that you glance briefly our Frequently Asked Questions so you are prepared to answer your own and your students' concerns - https://www.peerassesspro.com/frequently-asked-questions-2/

- Download a pdf of the Quickstart Guide and this Reference Guide here - http://tinyurl.com/papRefPdf

-

Contact

Patrick Dodd - https://www.peerassesspro.com/contact/

Quick links and related information

View the web Quickstart Guide at tinyurl.com/pdfQuickWeb

FAQ: How do I contact people at Peer Assess Pro?

FAQ: Where may I view the most recent version of the User Guide?

FAQ: What are the design objectives, key features, and benefits of the Xorro Peer Assess Pro development?

FAQ: What are the design objectives, key features, and benefits of the Xorro Peer Assess Pro development?

Design objectives

Our overall objectives for Xorro Peer Assess Pro™ are

- Streamline students' experience when completing the peer assessment
- Automate for the teacher many functions for launching and managing a peer assessment
- Reduce the chance of accidents and errors in use. This includes streamlining the teacher's administration of warning alerts about exceptional situations
- Provide the teacher with a structured approach to revealing results, probing specific teams' and students' performance and responses, and options for detailed exploratory data analysis.

Benefits for students

- A student will be able to rate all their team members in one combined peer assessment activity.
- A students may more easily rate comparatively the performance of their team members including themself
- Students are provided with the facility to advise the teacher directly if they believe their team composition has been specified incorrectly by the teacher
- Students can update their assessment response at any time in response to a directive from their teacher. The last submitted response alone will be used in the peer assessment calculations
- Students view their assessment survey, peer assessment results, and personal result (grade) by returning to a single URL communicated to them automatically by the Xorro Peer Assess Pro™ Teacher's dashboard. Results are available for students' view for no more than two weeks after the teacher has finalised the Peer Assess Pro™ Assessment Activity
- Optionally, a student may view all their previous peer assessment activities through the Xorro Plus Dashboard. Xorro Plus enables the student to

provide authoritative evidence supporting how their teamwork capabilities have been established and, hopefully, improved over successive participation in peer assessed team projects throughout their academic studies.

Benefits for teachers

- A one stop shop for launching, managing, and reviewing Peer Assess Pro™ activities including previous activities
- Automated generation of a unique student-specific Peer Assess Pro™ Survey for all members of the student's team including their self assessment
- Automated email communication to the students of the survey URL required for their completion of the assessment
- Warning alerts that provide prompts for actions the teacher can take to resolve the warning. For example, dispatch a proforma email to a student requiring them to reconsider and, optionally resubmit the survey if they were significantly over generous in assessing one team member when compared with other teammates' assessments of that same team member
- Automated email reminders to students to complete the survey despatched 72 hours, 24 hours and 12 hours before the Due Date for the assessment
- Mechanisms that reduce the chance of a students making errors in identifying the names of their correct team members. Furthermore, if a teacher makes a mistake, such as forgetting to include a student in a team, there is a recovery mechanism that impacts solely the students in the affected team(s) rather than the class as a whole

Xorro Peer Assess Pro™ is a work in progress

We appreciate your participation in this pre-market release of our substantially revised Peer Assess Pro™ in conjunction with the Xorro advanced quiz and survey platform.

As we proceed through this pre-market refinement phase we respond almost daily to your suggestions for improving both the software applications and user documentation. These improvements are implemented at anytime whilst we undergo our Beta Development phase. We anticipate that our implementations are robust enough to prevent loss of your data and wasting your time. We crave your forgiveness if we have been over optimistic in keeping Murphy's Law at a distance.

Where's the latest?

You need not take any action to use the latest versions of the Peer Assess Pro™ Xorro Teacher's Dashboard. Those updates happen in the background and will automatically use any data and activities you have initiated. However, if you use the PDF version of this user guide, you will need to update regularly to the latest version here.

Quick links and related information

FAQ: where may I view the most recent version of the Reference Guide?

FAQ: How do I find the the Peer Assess Pro Xorro Teacher's dashboard?

If you quit your browser then wish to return to the Teachers Dashboard

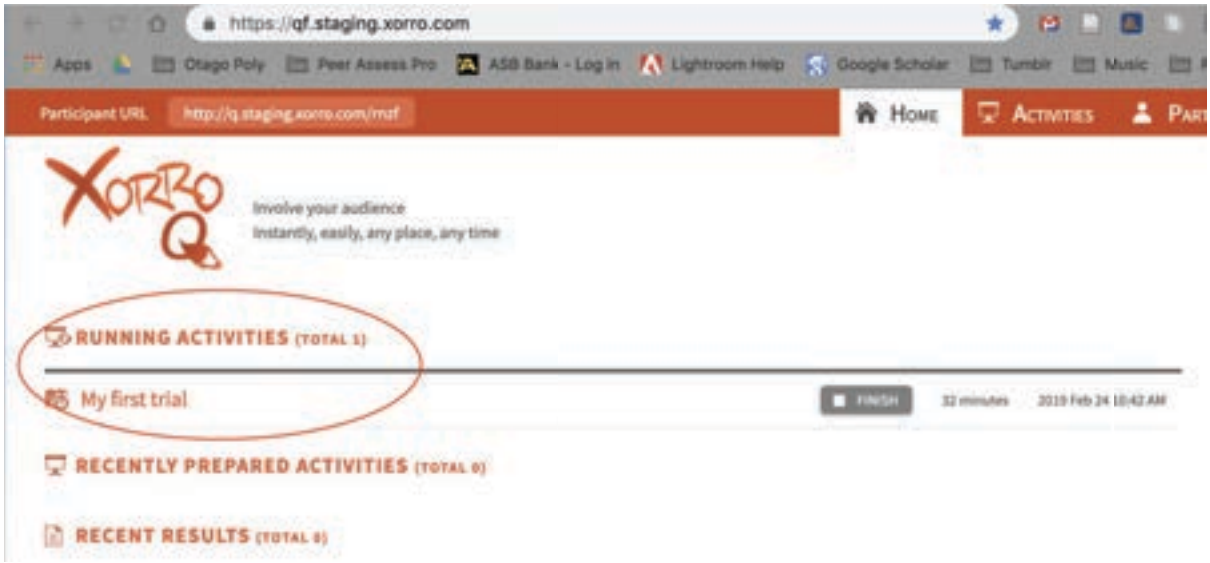
HOME: Running Activities

- Login to your Xorro Teacher's Dashboard
- Navigate to the HOME tab
- Note **Running Activities** should now show your new activity
- Select your specific activity, such as: '**My first trial**'
- The Peer Assess Pro Teacher's dashboard will display showing progress for that activity

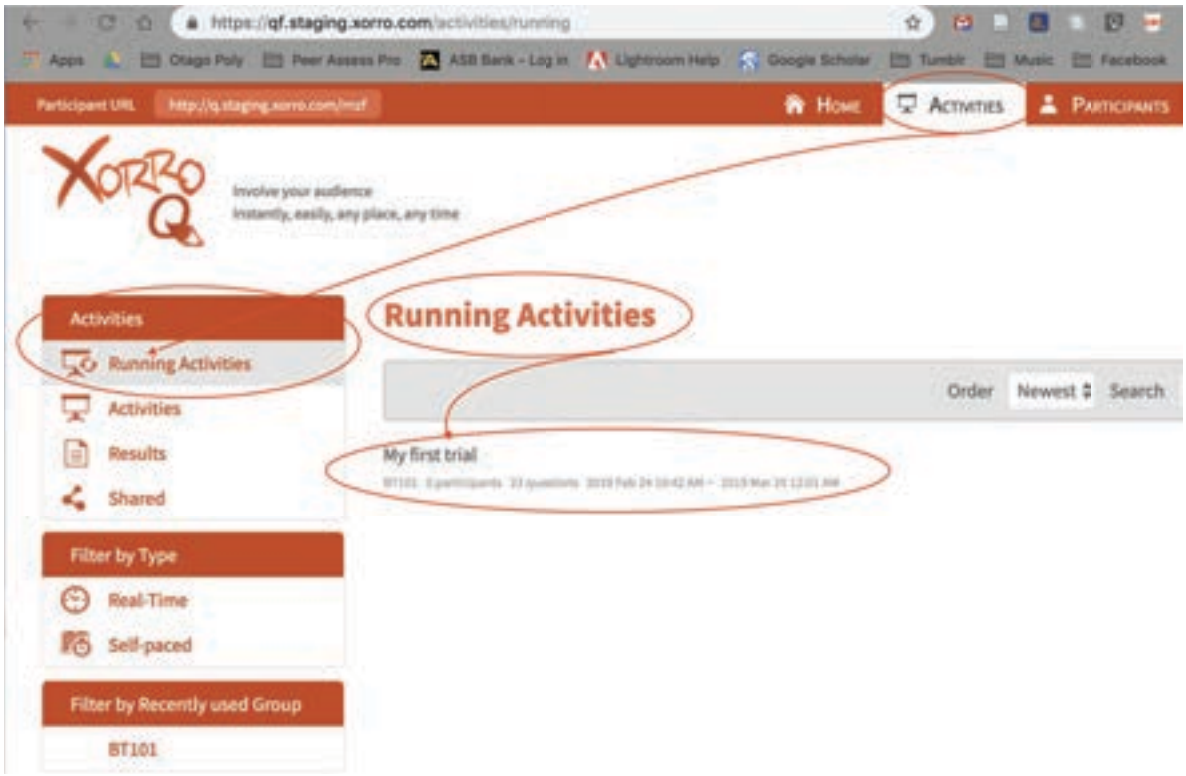
Alternative method: ACTIVITIES: Running Activities

- Login to your Xorro Teacher's Dashboard
- Navigate to the ACTIVITIES tab
- Select 'Running Activities'
- Select the specific activity

From HOME Tab



From Activities Tab: Running Activities



Quick links and related information

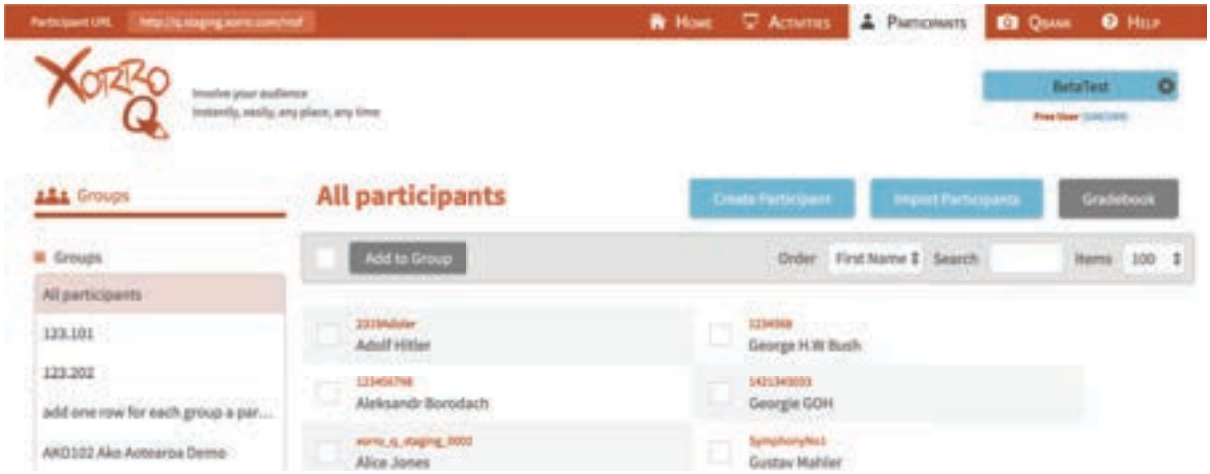
FAQ: How do I navigate the PARTICIPANTS page for Peer Assess Pro?

Select PARTICIPANTS Tab

Note the list of '**All participants'** currently known to Xorro in your institution.

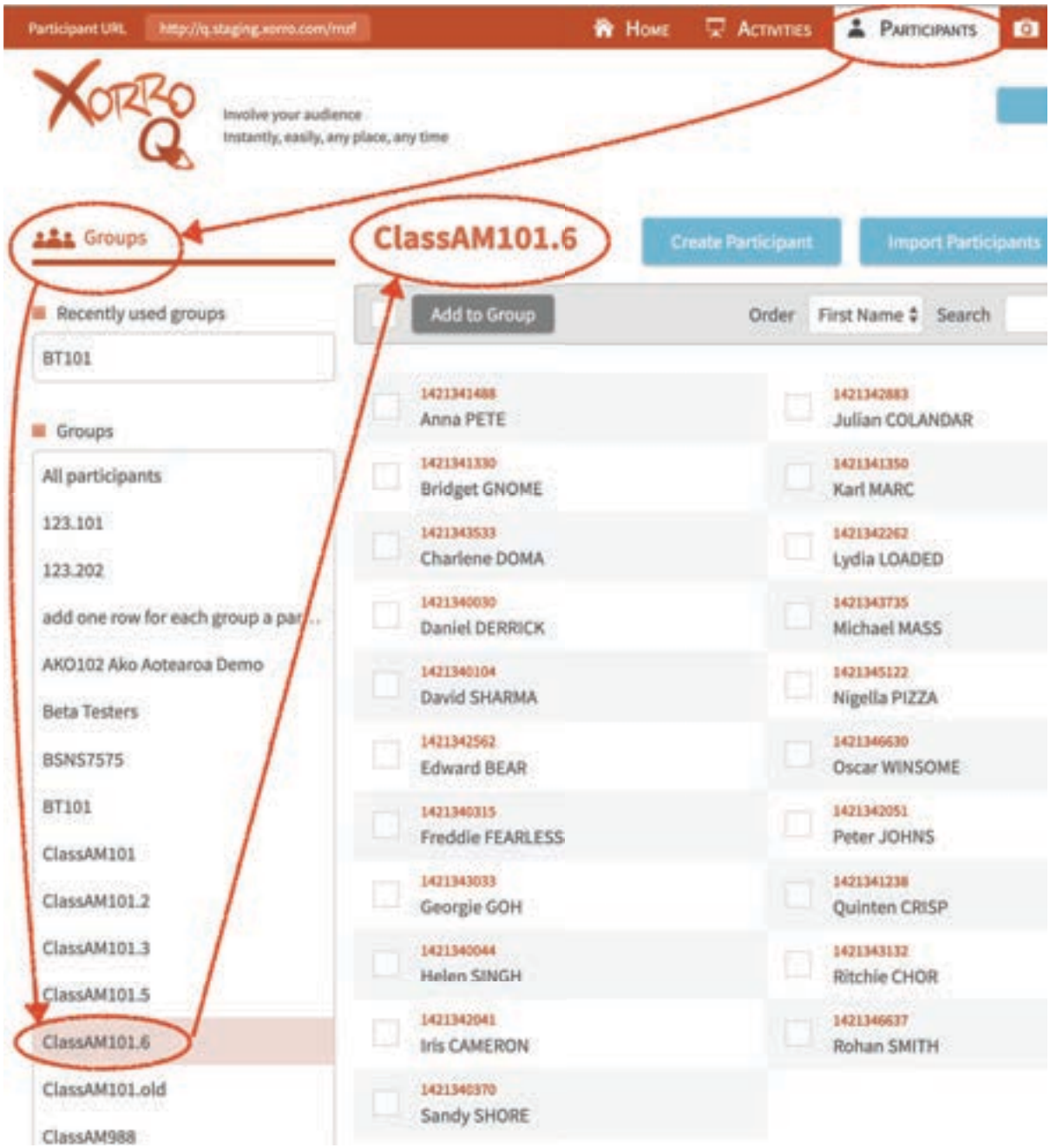
Note a list of all other **Groups** uploaded by other Teachers in your institution. A group is a list of participants, such as students in a class. The minimum requirement for a Group is id, first name, last name.

However, for a peer assessment activity a Group **must** include team membership for all team members. This team membership is not required for most other Xorro activities. Accordingly, Groups set up for other teachers or by other teachers will rarely contain the correct team membership data required for your Peer Assess Pro™ activity.



Orientation note: Select an existing Group

Select Group **ClassAM101.6**. This group selection displays a list of about 25 students in the class titled AM101.6



Inactive functions in PARTICIPANTS page

- The following buttons have no relevance to creating and launching a Peer Assess Pro activity within Xorro:
- **Create Participant** - REASON: Unable to supply Team name or email FUTURE DEVELOPMENT required
- **Add to Group** - Unpredictable results. Copying a member from one group to another will probably NOT include the required team membership information.
- **Gradebook** - The Gradebook for Peer Assess Pro is generated within the Peer Assess Pro Dashboard
- **Edit Participant** - Unable to supply Team name or email FUTURE DEVELOPMENT required

Quick links and related information

FAQ: How do I correct the participants (team members) in a group I uploaded?

FAQ: How do I correct the Team Composition in a running peer assessment activity?

FAQ: How do I correct the Team Composition in a running peer assessment activity?

Take care! Here there be dragons!!

Ensure you read ALL of this FAQ before proceeding.

If you make a mistake in this process the consequence may lead to unrecoverable, complete loss of all responses received to date

Apply this process when, for a l**aunched, running peer assessment activity**, you need to make these adjustments:

- Add a new member to a team
- Swap a team member to another team
- Correct the id or other details for a team member
- Add or delete a team

Key check points

- You must **upload the entire teamset for all teams and all students** you require in your running activity. **'Entire'** means both adjusted AND the **original unchanged data** from your original teamset CSV.
- Good practice: edit a copy of the original teamset you used to create the CSV you used to launch the activity
- Make your adjustments to the copy of your original teamset.
- Before re-importing, check your new teamset to ensure that you have the correct number of unique teams and unique students that you expect.
- Do not upload the corrected teamset CSV to a Xorro group. That will have unpredictable effects.
- Re-import the adjusted CSV through the **Team Composition** selection of the **Peer Assessment Running Activity dashboard.** Detailed steps below.
- Note carefully that the notifications of adjustments match your expectation eg changed team name, email, whatever.

View the team composition

Select the '**Team Composition'** button for the running **Peer Assessment Activity** for which you wish to adjust the team composition.

Correct the team composition

- Correct the Teamset Group File that was used to create the original peer assessment activity. That is, add team members, or swap the team members between teams.
- You may **correct or add ids and email addresses**.
- You may **add new teams**
- If you rename teams, then their responses to date will be **nulled.**
- DO NOT adjust the contents of the Column headed '**group_code'** in your CSV file. It must match exactly the Group_code used to launch the original activity. That is, GDE105 in this example.
- Review the 'Key check points'
- Re-Import the entire CSV for your class. Not just the changes.

During the re-import, the changes to the teamset will be presented to you so that you can check and confirm the adjustment process. Take care!

Upon completion of the re-import process, the running Peer Assess Pro Activity will continue.

All students in teams affected by a change in composition are now required to **resubmit** their peer assessment responses. Reason: They now have different team members to rate. The remaining teams of the class will be **unaffected. There responses remain submitted and evident within Peer Assess Pro.**

Team members will be **notified of their need to re-submit** by an automatically generated email from Peer Assess Pro.

Subtle technical note

You cannot change the participants in the Xorro Group used to create the running activity, as explained in the FAQ:

FAQ: How do I correct the participants (team members) in a group already uploaded to Xorro?

Reason: whenever a Xorro activity is created a **snapshot** is taken of the Group used to create the activity. From that moment this **snapshot**, known as a Xorro **Teamset**, is inextricably connected with the activity. That activity-specific teamset can be updated **only** during a running activity through the FAQ detailed above, through the **Team Composition** section of the Peer Assess Pro dashboard.

In the image above, the Group used to create the peer assessment activity is BT101. Any changes made to that group WILL NOT affect the running activity. The teamset created from the Group BT101 is denoted **2019-02-24 BT101 by Beta Beta**. That name indicates what date the teamset was created, from which Group, and by whom.

FAQ: Can I create a peer assessment activity without having all my teams correctly identified by team name and/or team membership?

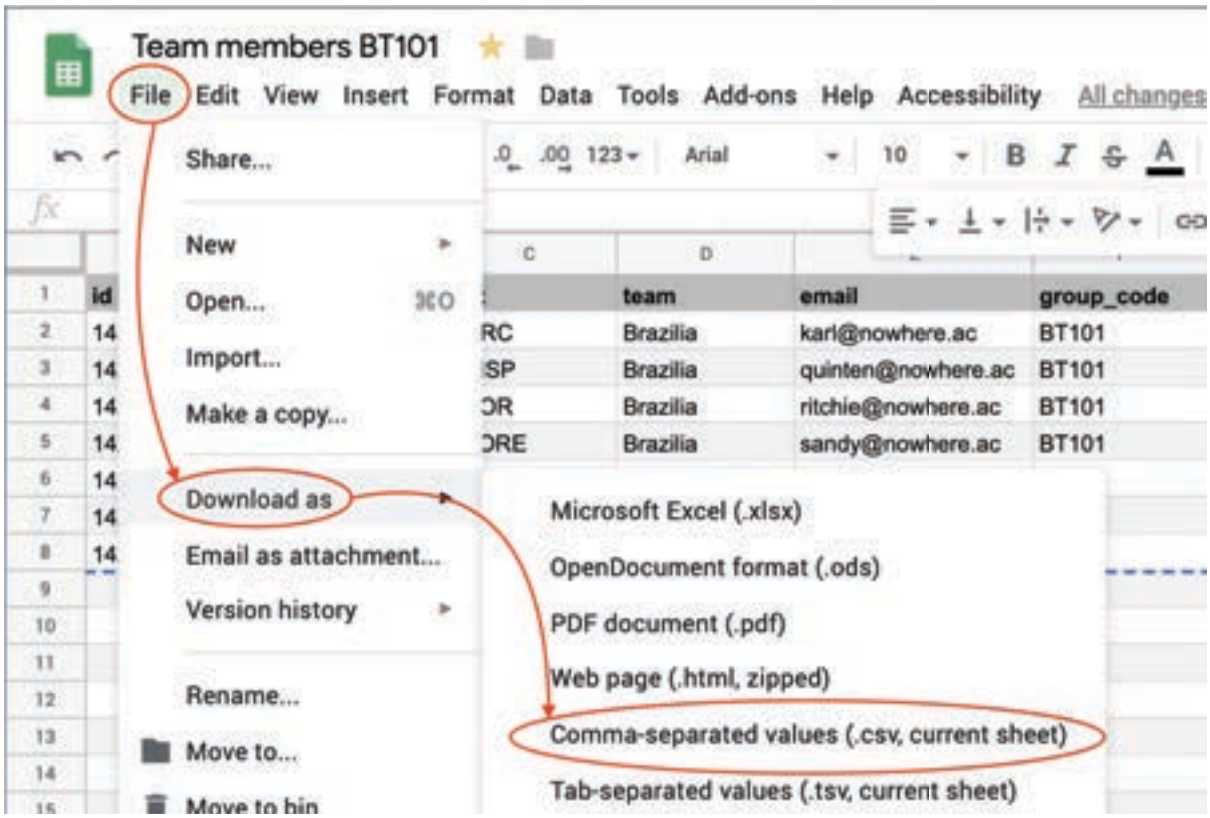
You can add, swap or delete delete team members anytime **before launching** the activity, and anytime before the peer assessment activity is finalised.

Good Practice Hint. Get your team composition list absolutely correct before the activity is launched and made available for response by your students. Reason: All students in teams affected by a change in composition will be required to resubmit their peer assessment responses. The students now have different team members to rate. However, the remaining teams of the class will be unaffected.

Quick links and related information

FAQ: How do I correct the Team Composition in a running peer assessment activity?

FAQ: How do I create a CSV file from a Google Sheet?



Quick links and related information

FAQ: How do I view a demonstration version of Xorro Peer Assess Pro?

A Beta Test demonstration site has been established with these credentials:

Home > pap > Users

Beta Test

Username:	BetaTest
First Name:	Beta
Last Name:	Test
E-Mail:	peter@peerassesspro.com

Browse to: https://qf.staging.xorro.com/

Enter: Username **BetaTest**, Password **Secret**

This Beta Test User is established for you to view. But don't touch to hard!

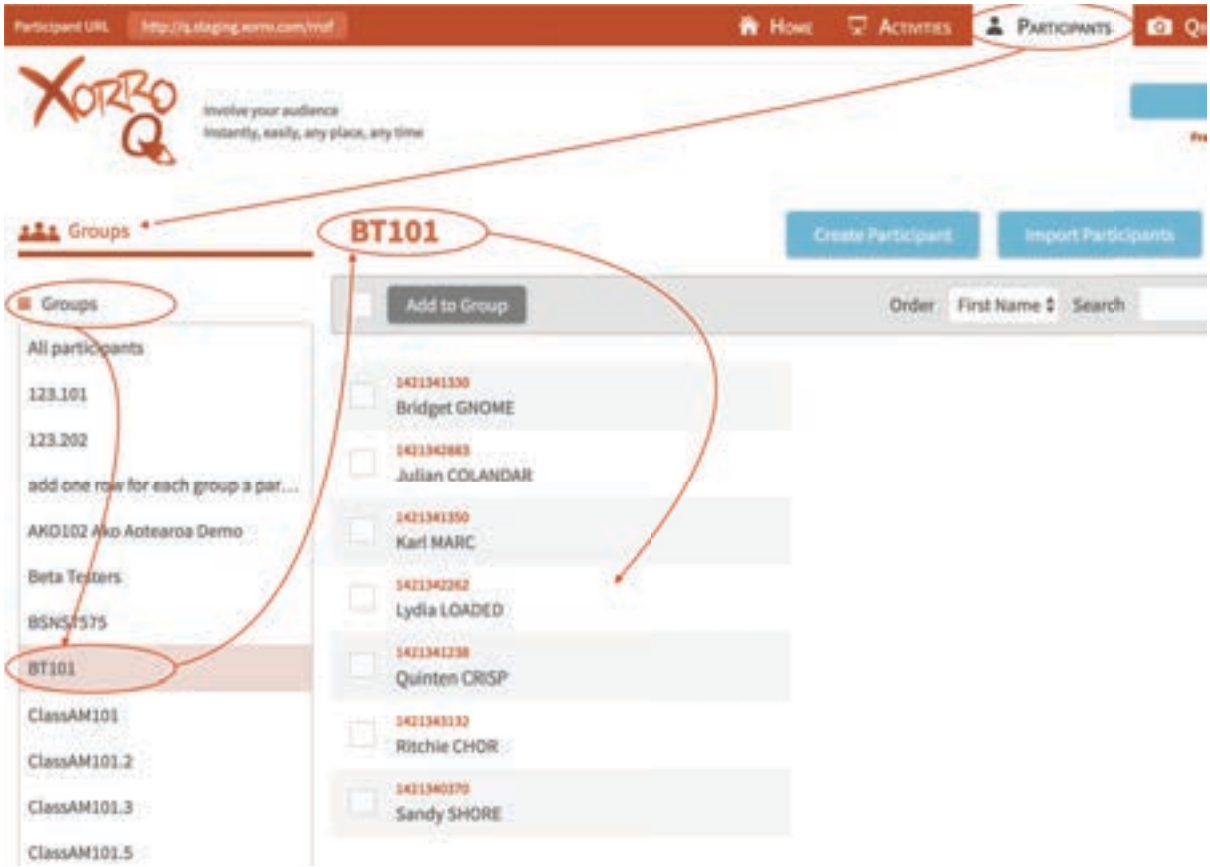
View

- A team group list csv file already uploaded to Xorro Participants, titled BT101
- A Running Activity for peer assessment using the group BT101 where about half the participant team members have submitted. Note the Teacher's Dashboard Warnings; the result statistics to date. Please DO NOT FINALISE this activity! Please do not adjust the composition of group BT101 in any csv file you upload
- A FINALISED activity where no more responses can be incorporated nor adjustments made to Team Results, Publication Status or Calculation of Personal Result method. (xxx to come xxx)

FAQ: How do I correct the participants (team members) in a group already uploaded to Xorro?

View an existing imported Group

Select the Group name to view a list of all students in your class (Group).



Correct the team members associated with an existing Xorro TeamSet Group

- Recreate the Team Members Group CSV file
- Load then import the Team Members file according to

Section 2. Launch Peer Assessment Activity

Note that the data loaded from the **TeamSet CSV** operates according to these rules

- If the **id does not exist** in the Xorro Group then ALL new attributes such as id, team, email, first name, last name will ADD a NEW Record to the Group and institution All Participants records.
- If the **id exists already in the Xorro Group** then altered attributes in the CSV, such as team, email, first name, last name will UPDATE the EXISTING record identified by the id in the Group and All Participants records.
- Note that team membership is Group specific.
- **Caution:** If the existing Xorro Group contains an id that is NOT supplied in the new csv file then **that id will remain** in the Xorro group with its original attributes including team membership. HERE THERE BE DRAGONS!

If a peer assessment activity is launched and running then you cannot update team membership details. You must use the FAQ below. Reason: whenever a Xorro activity is created a snapshot is taken of the Group used when creating the activity. From that moment this snapshot, known as a Xorro Teamset, is inextricably connected with the activity. That activity-specific teamset can only be updated during a running activity through the following FAQ.

Quick links and related information

FAQ: How do I correct the Team Composition in a running peer assessment activity?

FAQ: Where may I view the most recent version of the user guides?

Quickstart Guide

Quickstart Guide for Peer Assess Pro: Xorro. (2019, March 6). Peer Assess Pro. http://tinyurl.com/pdfQuickWeb

Pdf version: http://tinyurl.com/pdfQuick

Video guides

Login and orientation. (2019). Auckland: Peer Assess Pro.

Launch a Peer Assess Pro Activity. (2019). Auckland: Peer Assess Pro.

Student survey experience. (2019). Auckland: Peer Assess Pro.

Latest reference guide

Peer Assess Pro. (2019, March 5). *Manage a Peer Assessment Activity using Xorro: Reference Guide for Teachers.* Auckland: Peer Assess Pro

Web version http://tinyurl.com/papRefWeb2

Pdf version http://tinyurl.com/papRefPdf

Work in progress Google DOCS development version

Google Docs version.

Feel welcome to make suggestions or ask questions using the Comment feature of the Google Docs development version. Shows work in progress improvements.

Frequently Asked Questions for teachers and team members

Frequently Asked Questions (FAQs) (2019). In *Manage a Peer Assessment Activity using Xorro: Reference Guide for Teachers* [web]. Auckland, New Zealand: Peer Assess Pro. http://tinyurl.com/papFAQ

Teachers Process Flowchart

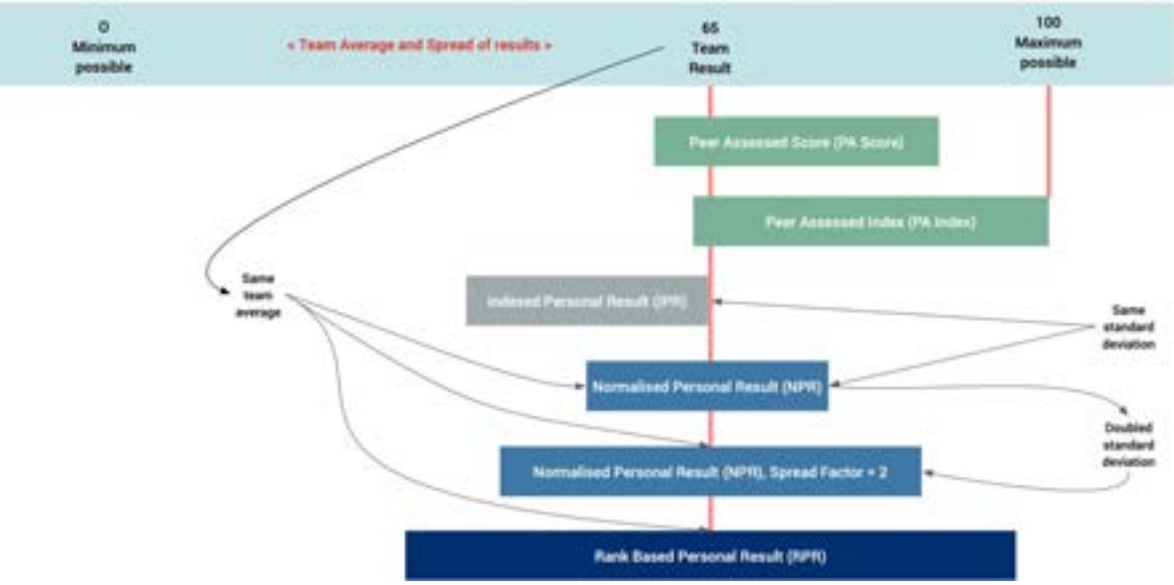
Peer Assess Pro. (2019). *Xorro Peer Assess Pro™ Teachers Process Flowchart: Overview and Detail*. http://tinyurl.com/papChart

Quick links and related information

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity

The choice of calculation method for determining a team member's personal result is determined by the teacher's preference for compensating more strongly team members who have contributed significantly to their teams, and under-rewarding team members who are peer assessed as weak contributors. The figure illustrates the statistical features, such as team average, range, and standard deviation, associated with each method.

Alternative calculation methods for Personal Result (PR) illustrating effect on team average and spread for a given Team Result



The teacher can select either the Peer Assessed Score (PA Score) or Peer Assessed Index (PA Index) if they wish to exclude a team result in calculating the Personal Result (PR).

More usually, the Peer Assessed Score and Team Result (TR) are combined mathematically to produce a Personal Result. There are three alternative methods. As the figure illustrates, the Indexed Personal Result (IPR) is the least discriminating method, whilst the Rank-Based Personal Result (RPR) is the most discriminating in terms of favouring significant team contributors and penalising

weak contributors. Most teachers select the Normalised Personal Result, often with a spread factor of 1.5 to 2.0.

In contrast to the graphical illustration earlier, the following table summarises the example calculations presented through a series of FAQ that present the mathematical definition and example calculations for each method.

Comparison of Personal Results calculated by several methods in a team of four members

	ASSESSEE					
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**	**Mean**	**Range**
Rank Reversed	1	2	4	3		
Peer Assessed Score, PA Score	54	74	82	78	75	28
Peer Assessed Index, PA Index	66	90	100	95	88	34
Team Result, TR	50	50	50	50	50	0
Indexed Personal Result, IPR	33	45	50	48	44	17
Normalised Personal Result, NPR (SpreadFactor = 1)	39	51	56	54	50	17
Normalised Personal Result, NPR (Spreadfactor = 2)	28	52	62	58	50	34
Rank-Based Personal Result, RBR	20	40	80	60	50	60

Source: [FAQ: How are peer assessment and personal results calculated and defined mathematically?]

Definitions and features of calculation methods used in Peer Assess Pro

Attribute (X1)	Abbreviation (X1)	Definition (X1)
Peer Assessed Score	PA Score	A relative measure of the degree to which a team member has contributed to their team's overall achievement, team processes, and leadership. The Peer Assessed Score (PA Score) is calculated for each team member directly from their Average Team Contribution (ATC) and Average Leadership Contribution (ALC). That is, from the ten components of Team and Leadership contribution survey in the peer assessment. A Peer Assessed score is generally used to compare the relative contribution of students WITHIN the same team, rather than BETWEEN teams. The Team Result has NO impact on the value of the Peer Assessed Score. Values for the PA Score range from zero through 100.
Peer Assessed Index	PA Index	The Peer Assessed Score (PA Score) is indexed upwards so that the person in the team with the highest Peer Assessed Score is awarded a Peer Assessed Index of 100. All other team members receive a proportionally lower PA Index in the ratio PA Score / max(PA Score). The Team Result has NO impact on the value of the Peer Assessed Index.
Team Result	TR	The result awarded to the team for the outputs of their work. The teacher typically derives the Team Result (TR) from grades for team reports, presentations, and results of Team Readiness Assurance Tests. The teacher may select to combine a student's Peer Assessed Index (PA Index) with their team's Team Result (TR) to calculate a Personal Result (PR) for each student, reflecting their relative contribution to the Team Result as assessed by their peer team members. Peer Assess Pro enables the teacher to select from several methods to combine the Team Result and Peer Assessed Index (PA Index) to produce a Personal Result: the Indexed Personal Result (IPR), the Normalised Personal Result (NPR), and the Rank Based Personal Result (RPR).
Measures of a student's personal result		

Personal Result	PR	A student's personal result gained from combining their Peer Assessed Index (PA Index) and, optionally, their Team Result (TR). The teacher selects from one of several Calculation Methods to calculate the Personal Result that incorporates the Team Result. These methods are Indexed Personal Result (IPR), Normalised Personal Result (NPR), and Rank-Based Personal Result (RPR). The choice of method is determined by the teacher's preference for compensating more strongly students who have contributed significantly to their teams, and under-reward students who are peer assessed as weak contributors. Figure 1 illustrates the statistical features, such as team average, range, and standard deviation, associated with each method. The IPR is the least discriminating method, whilst the RPR is the most discriminating in terms of favouring significant team contributors and penalising weak contributors, as the figure illustrates.
Indexed Personal Result	**IPR**	The Indexed Personal Result is calculated from the Team Result (TR) combined with the student's specific Peer Assessed Index (PA Index). The Indexed Personal Result method awards the Team Result to the TOP RATED student in the team, since, by definition, their Peer Assessed Index is 100. All remaining students in the same team earn the Team Result downwards, directly proportional to their PA Index. The Indexed Personal Result calculation means that NO team member can earn an Indexed Personal Result greater than the Team Result. That is, values for the Indexed Personal Result range from zero up to the Team Result.

Normalised Personal Result	**NPR**	The Normalised Personal Result is calculated from the Team Result combined with the student's specific Indexed Personal Result (IPR). However, in contrast to the IPR method, the Normalised Personal Result method awards the AVERAGE student in the team the Team Result (TR). All remaining students are awarded a Personal Result ABOVE or BELOW the Team Result depending on whether their IPR is above or below that team's average. Features of the Normalised Personal Result are that (a) In contrast to the IPR method, the Normalised Personal Result method calculates a Personal Result ABOVE the Team Result for the above-average peer rated students in the team (b) The average of the team's Normalised Personal Results matches the Team Result (c) The spread of the team's Normalised Personal Results matches the spread of the Indexed Personal Results (IPR) that is calculated for that team. Spread is measured by the standard deviation statistic. . Optional feature: To enhance the effect of rewarding high contributors and penalising weak contributors the tutor can increase the Spread Factor (SF) from the default value of 1.0. Increasing the Spread Factor increases the spread of the results centred around the Team Result. However, an increase in the Spread Factor will maintain a team average NPR that matches that team's Team Result. A Spread Factor of 1.5 to 2.0 is recommended, especially in classes where team members are reluctant to penalise weak contributors and/or reward the highest contributors through their peer assessment rating responses. Values for the NPR range from zero to 100. Calculations that exceed these ranges are clipped to fit within zero to 100

		The Rank Based Personal Result is calculated from the Team Result combined with the student's specific Rank Within Team based on that student's Peer Assessed Score. Like the Normalised Personal Personal Result the RPR method awards the AVERAGE student in the team the Team Result. All remaining students are awarded a personal result above or below the Team Result depending on whether their Rank Within Team is above or below that team's middle-ranked student.
Rank Based Personal Result	RPR	Features of the Rank Based Personal Result (PR) calculation method are that (a) A team's RPR values are spread over a MUCH WIDER range than the NPR and IPR methods. Small differences in PA scores within a team are amplified significantly by this method (b) In contrast to the IPR method, the RPR method calculates a Personal Result significantly ABOVE the Team Result for the top ranked student in the team (c) Like the NPR method, the average of the team's RPR values matches the Team Result. Values for the Rank Based Personal Result range from zero to 100. Calculations that exceed these ranges are clipped to fit within the range zero to 100.

Note that in the Xorro version of Peer Assess Pro, we have renamed the following Personal Result Methods from those used in the Google Docs version of Peer Assess Pro.

Renaming of terms for Xorro Peer Assess Pro

Xorro Peer Assess Pro	Abbreviation	Google Peer Assess Pro	Abbreviation
Peer Assessed Score	PA Score	Team Based Learning Score	TBL Score Score
Peer Assessed Index	PA Index	Team Based Learning Index	TBL Index

Quick links and related information

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

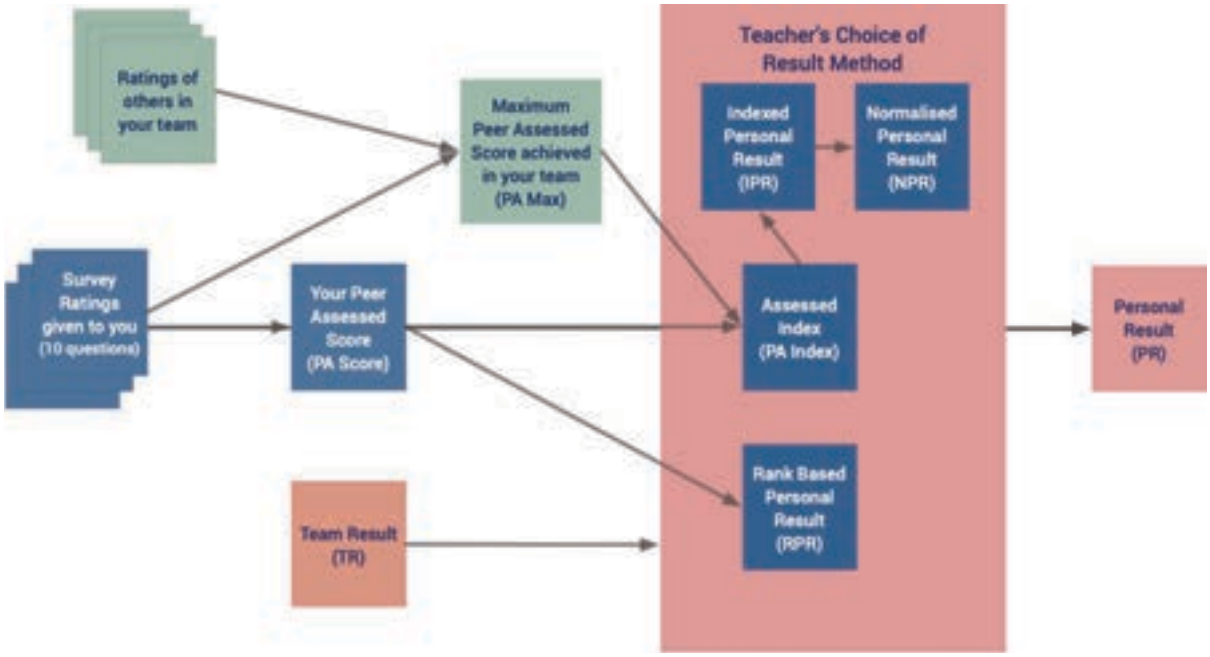
A teacher has several alternative calculation methods to determine a personal result from a team member's Peer Assess Pro assessment. The teacher will usually advise team members about the method they have chosen.

The teacher's choice of calculation method for a personal result is determined by the teacher's preference for

- Adjustments to **compensate more strongly** team members who have contributed significantly to their teams, and **under-reward** team members who are peer assessed as weak contributors
- Incorporating a **team result**, based on grading of a team's delivered outputs, such as reports and presentations

These choices are illustrated in this figure.

A student's Personal Result emerges from the Teacher's choice of Calculation Method, relative Peer Assessed Score, and Team Result



Calculation methods that exclude a team result

The teacher can select either the Peer Assessed Score (PA Score) or Peer Assessed Index (PA Index) if they wish to exclude the team result in calculating the personal result.

Quick links and related information

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: How is the Peer Assessed Index (PA Index) calculated?

Calculation methods that incorporate a team result from team outputs

More usually, the Peer Assessed Score (PA Score) and team result are combined through one of three methods. The following methods are listed in order of **increasing impact** for compensating more strongly students who have contributed significantly to their teams, and under-rewarding students who are peer assessed as weak contributors

FAQ: How is the Indexed Personal Result (IPR) calculated?

FAQ: How is the Normalised Personal Result (NPR) calculated?

FAQ: How is the Rank Based Personal Result (RPR) calculated?

Quick links and related information

FAQ: What factors are measured in the peer assessment survey?

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

Automated communications to students

The Teachers Process Flowchart: Detail illustrates the points throughout the peer assessment process where emails are sent to students to advise them

- When they can undertake the peer assessment survey
- When they can view provisional and finalised results
- If they are required to consider resubmitting a response

In most cases, the emails are generated automatically by the Peer Assess Pro system. In the case of warnings, the teacher has the option of initiating an email request to a student, or ignoring that warning.

Copies of all emails are sent to the teacher whose Xorro account was used to launch the activity

Standard operating mode

When you create and launch a Peer Assess Pro™ Peer Assessment activity in Xorro AND the **Start Date** has been reached:

- A unique **Participants URL** is generated that identifies the assessment survey that your class will complete
- The **Participants URL** is emailed automatically to all students in the class immediately the Start Date for the activity is reached. The email includes details such as: activity title, group_id, teacher name, the due date for completion, and the date when the assessment becomes available for completion. The teacher specified this data when the peer assessment activity was launched and created in the Xorro Teacher's dashboard
- The student must **login via the URL supplying the identification code**, id specified in the **Team List Group** of participants associated with the creation of this peer assessment activity

- Students undertaking the assessment are sent further emails including the same activity-specific **Participants UR** when interim and **Finalised results** are published. Furthermore, they receive additional emails when required. Some emails are initiated by action of the teacher, whilst others are generated automatically. For instance, participants automatically receive a reminder at 72 hours, 24 hours, and 12 hours before the **due date** if they have NOT completed a submission.
- The Peer Assess Pro **Log** shows a record of all emails sent. *** UNDER DEVELOPMENT ***

Alternative mode for student access to assessment and results

Alternatively, the teacher can direct students to the **Participant URL** shown at the top left of the Xorro HOME page. The student must then select from a list the correct peer assessment activity for their response. The teacher may deliver other Xorro-based test activities from which the student must select the correct Peer Assess Pro™ activity distinguished by the Activity Title specified by the teacher.

FAQ: How do I view and experience what the students experience?

FAQ: What questions are asked in the peer assessment survey? in the peer assessment survey?

FAQ: How do I view and experience what the students experience?

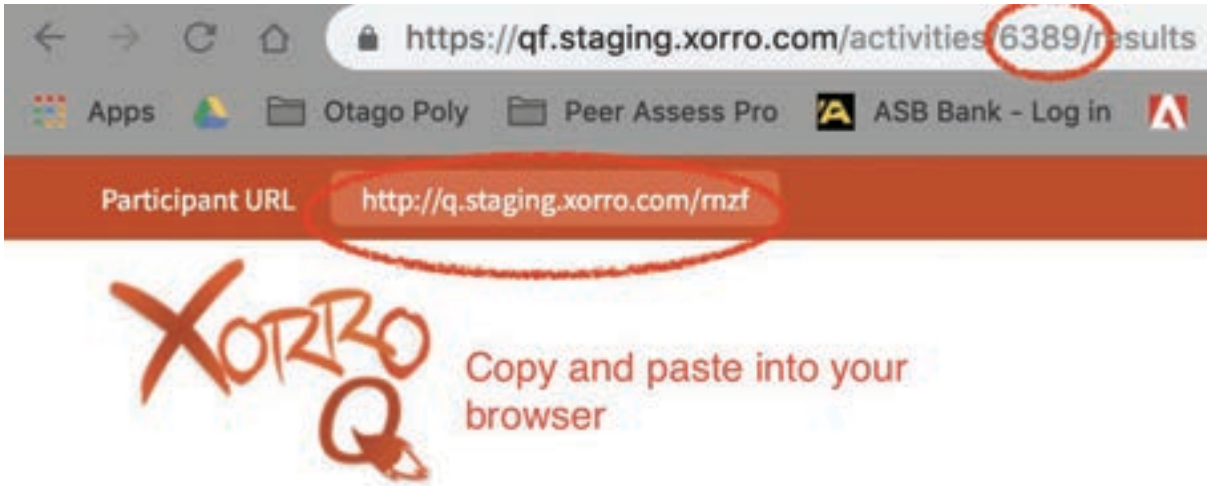
View your student's personal results directly from your Teacher's Dashboard

xxx UNDER DEVELOPMENT xxx

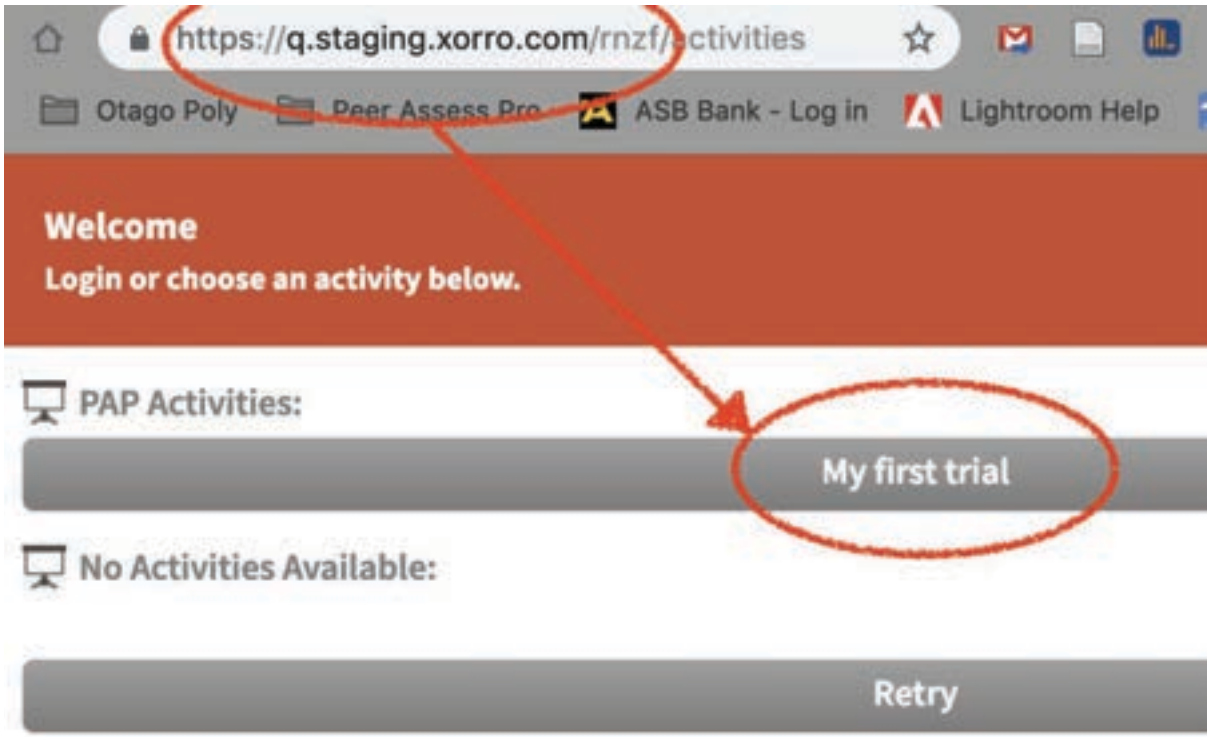
View your students' experience of the Peer Assess Pro™ survey

- Enter your **Participants' URL** into your browser
- Select the activity you wish to experience
- Login in using the Identification (id) of a student in the Team List Group you used to create the activity
- You will see a variety of screens, depending on the state of the peer assessment survey

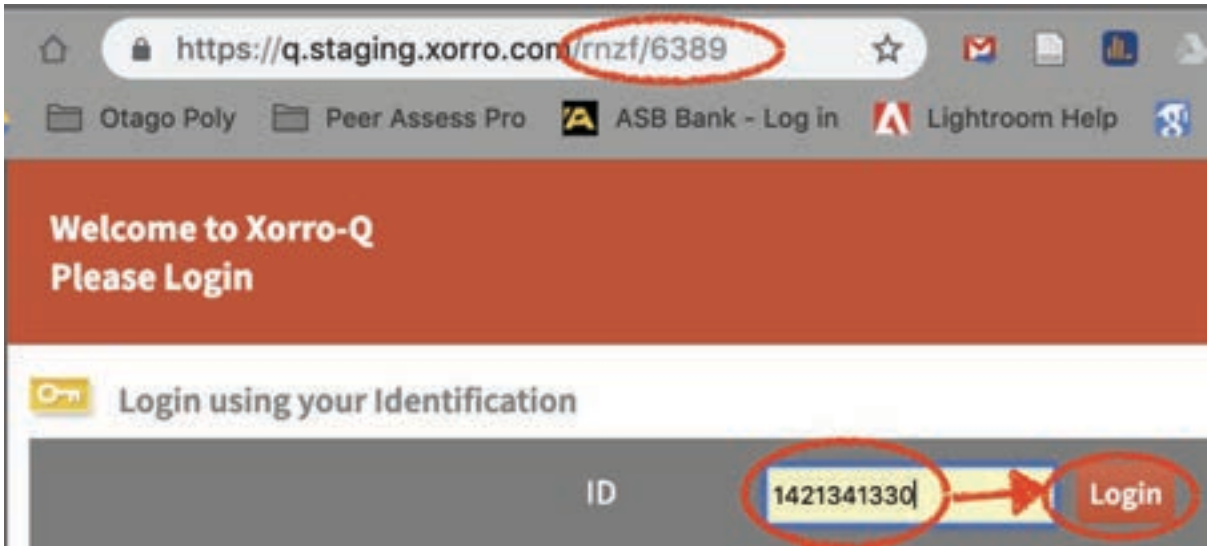
Enter your Participants' URL into your browser



Select the activity you wish to experience



Login in using the Identification (id) of a student in the Team List Group used to create the activity

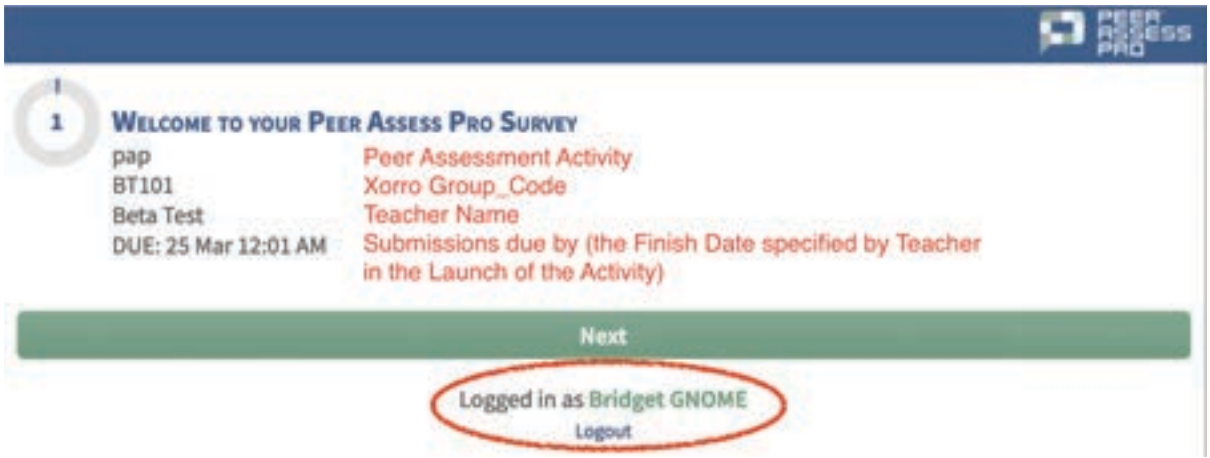


View a survey ready and waiting for responses

The student will see this view when all of the following are TRUE:

- The Activity Start Date has passed
- The Activity has NOT been Finalised by the Teacher
- The Student has NOT submitted their responses to the Survey.

Note that students can continue to submit responses AFTER the Due Date UNTIL the teacher has Finalised the activity.



View a sample question

View a student's published results

The student will be able to see their Personal Results when all the following are true:

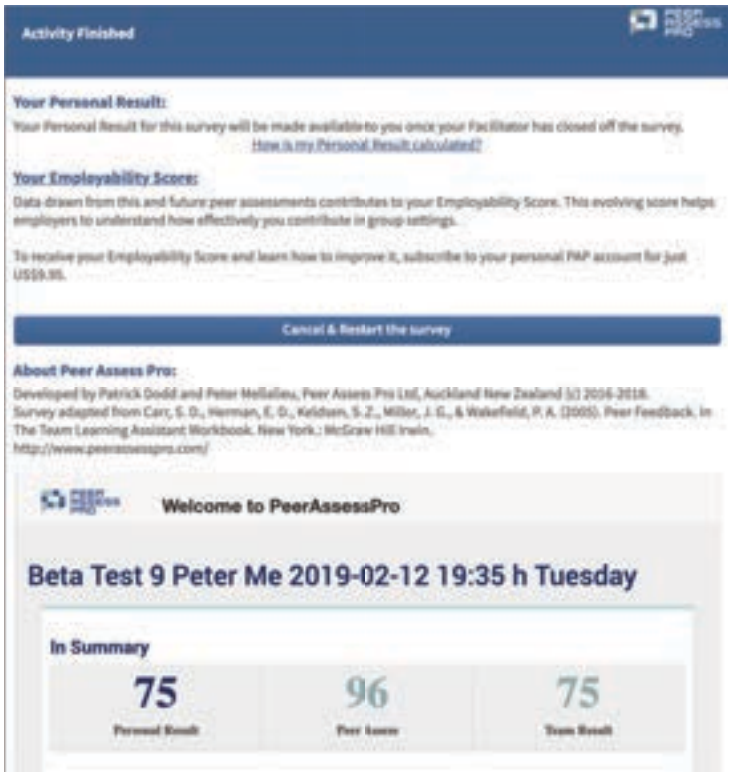
- The Activity Start Date has passed
- The date is within two weeks of the activity being Finalised by the Teacher.
- The Student has submitted their responses to the Survey.
- The teacher has Published results updated to include the student's response
- At least one half of the team members have submitted a response, with at least three submissions required.

A student with a Xorro Plus account may view his results any time after the Activity is Finalised by the Teacher.

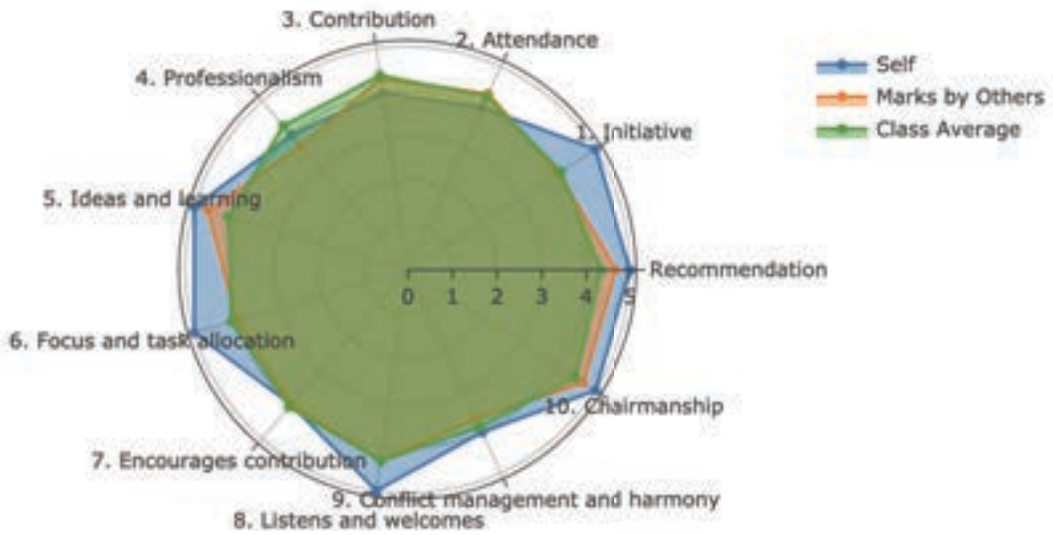
The student views

- Their Personal Result, Team Result and Peer Assessed Score
- A spider chart showing their self assessment compared with the class average, and the ratings by others in their team
- Qualitative remarks about Task and Leadership Contribution, and areas for future development

Example results for a student



Quantitative Analysis Spider Chart



View the peer assessment survey for a demonstration class

Xxx TO DO xxx

Quick links and related information

FAQ: What questions are asked in the peer assessment survey? in the peer assessment survey?

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FAQ: Why are different terms used to display peer assessment results in the Xorro and previous Google versions of Peer Assess Pro™?

The following terms have been renamed from the Google version of Peer Assess Pro for the Xorro Peer Assess Pro

Renaming of terms for Xorro Peer Assess Pro

Xorro Peer Assess Pro	Abbreviation	Google Peer Assess Pro	Abbreviation
Peer Assessed Score	PA Score	Team Based Learning Score	PA Score Score
Peer Assessed Index	PA Index	Team Based Learning Index	PA Index

Quick links and related information

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: How do I take action on the Warnings presented in the Peer Assess Pro™ Teacher's Dashboard?' What if I ignore the Warnings?

In general, see Section Action responses to warnings.

Critical warnings!

These warnings must be resolved, otherwise utterly invalid results will arise, and students' time will be wasted completing incorrect surveys.

The composition of a team needs adjusting, see

See Adjusting team composition

Important warnings

Peer Assess Pro will not be able to present results for all teams unless these warnings are resolved.

Insufficient responses from a team are received

See Results hidden from team members and teacher

Calculation Method require Team Results:

See Enter Team Results

Informational warnings

These warnings do not affect critically the operation of Peer Assess Pro. However, the teacher would be prudent to review the details to ensure that peer assessments have been conducted fairly and honestly.

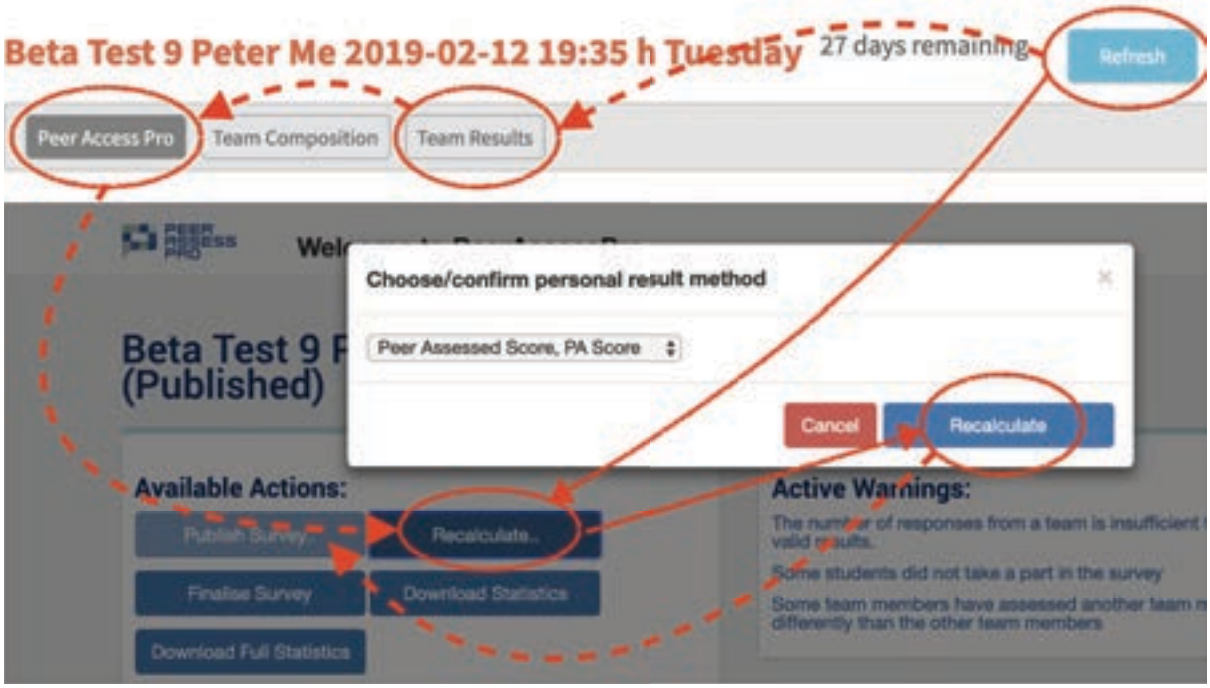
Overgenerous or parsimonious ratings by a team member.

FAQ: How is an outlier peer assessment rating identified?

Quick links and related information

FAQ: What is the content of emails sent by Peer Assess Pro?

FAQ: When, why, and how do I Refresh and Update Results?



When to recalculate

You select **Refresh** and **Update** results when

- You have adjusted the values for one or more **Team Results**
- You have adjusted the method of **calculation** for the Personal Result
- You are about to **Publish** results to students
- You are about to **Download** statistics
- You are about to **Finalise** the peer assessment activity
- **New survey responses** have been received by Xorro, but they have not yet been transferred into the Peer Assess Pro database. If in doubt, **Refresh**!

Why recalculate?

The most important reason is that you as a teacher MUST be able to review results BEFORE displaying (**publishing**) results to students. After examining the results to date, you might publish an interim snapshot of the results for view by students.

Students may review the interim results and raise issues such as a questionable peer assessment rating, such as scapegoating. Alternatively, you may need to adjust

a Team Result, or experiment with another method of Personal Result Calculation.

In this situation, we have presumed **you do not want new responses, nor adjustments to be immediately viewable by students**. In particular, you need the opportunity to review the effect of adjustments before explicitly publishing revised results to students.

How to recalculate

- Select **Refresh**
- Optionally adjust **Team Results**
- Select **Peer Assess Pro** in the Xorro Teachers Dashboard
- Select **Recalculate**
- Optionally, select an alternative **Personal Result** method of calculation
- Confirm **Recalculate**

Quick links and related information

FAQ: What questions are asked in the peer assessment survey?

The Peer Assess Pro survey measures one overall assessment, **Recommendation**, followed by ten quantitative ratings, then several qualitative questions.

The ten quantitative ratings are used to calculate the **Peer Assessment Score (PA Score)**. The ten ratings are categorized into two classes: **Contribution to Task**, and **Contribution to Leadership and Teamwork**, as shown in the example survey below.

In addition, two qualitative questions are asked that request **examples of behaviours** supporting the quantitative ratings in relation to Contribution to Task, and Contribution to Leadership and Teamwork. Finally, the assessor is asked to provide **Development Feedback**. That is, advice that would help the team member improve their future contribution to the team.

Quick links and related information

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

The ten questions used as the basis for calculating the Peer Assessment Score are adapted from:

Deacon Carr, S., Herman, E. D., Keldsen, S. Z., Miller, J. G., & Wakefield, P. A. (2005). Peer feedback. In *The Team Learning Assistant Workbook*. New York: McGraw Hill Irwin.

Example Peer Assessment Survey: Quantitative

My name is:		I am rating my team member:			
My Team name is:		Team Member A			
			Team Member B		
				Team Member C	
					Self
Recommendation	How likely is it that you would recommend this team member to a friend, colleague or employee? 1 = Highly unlikely, 5 = Extremely likely				
Contribution to Task Accomplishment					
	Rate the team member on a 5-point scale. Rating scale: 1 = Almost never, 2 = Seldom, 3 = Average, 4 = Better than most, 5 = Outstanding Rate your typical or average team member a mid-level rating of 3.				
Initiative	Shows initiative by doing research and analysis. Takes on relevant tasks with little prompting or suggestion.				
Attendance	Prepares for, and attends scheduled team and class meetings.				
Contribution	Makes positive contributions to meetings. Helps the team achieve its objectives.				
Professionalism	Reliably fulfils assigned tasks. Work is of professional quality.				
Ideas and learning	Contributes ideas to the team's analysis. Helps my learning of course and team project concepts.				
Contribution to Leadership and Team Processes					
Focus and task allocation	Keeps team focused on priorities. Facilitates goal setting, problem solving, and task allocation to team members.				
Encourages contribution	Supports, coaches, or encourages all team members to contribute productively.				
Listens and welcomes	Listens carefully and welcomes the contributions of others.				
Conflict management and harmony	Manages conflict effectively. Helps the team work in a harmonious manner.				
Chairmanship	Demonstrates effective leadership for the team. Chairs meetings productively.				

Example Peer Assessment Survey: Qualitative

Peer Assessment Survey: Feedback to the team member Submit one copy of this form for each team member
My name is:
I am a member of Team Number and Name:
I am assessing (student's name):
Contribution to Task Accomplishment For the team member you have assessed, provide specific examples of productive or ineffective behaviours related to your ratings of Contribution to Task Accomplishment. For example, shows initiative; attends meetings; makes positive contributions; helps team achieve objectives; is reliable; contributes quality work; contributes to learning of course concepts. Further examples here http://tinyurl.com/BARSOhland
Contribution to Leadership and Team Processes For the team member you have assessed, provide specific examples of productive or ineffective behaviours related to your ratings of Contribution to Leadership and Team Processes. For example: keeps team focused on priorities; supports, coaches and encourages team members; listens carefully; manages conflict effectively; demonstrates effective leadership.
Development feedback What specific behaviours or attitudes would help your team member contribute more effectively towards your team's accomplishments, leadership, and processes? Please provide specific positive or constructive feedback that could enable the team member to improve their behaviour productively. Considering your team member's strengths, how could that person coach other team members to acquire similar strengths for Task Accomplishment, Team Processes, and Leadership?
Source: Peer Assess Pro (2019).

FAQ: How is the Peer Assessed (PA) Score calculated?

The Peer Assessed Score, **PA Score**, is a relative measure of the degree to which a team member has contributed to their team's overall achievement, team processes, and leadership.

A Peer Assessed Score is generally used to compare the relative contribution of students WITHIN the same team, rather than BETWEEN teams. The Team Result has NO impact on the value of the Peer Assessed Score.

The PA Score is calculated for each team member directly from summing the ten ratings of Team and Leadership Contribution surveyed in the peer assessment. The sum of ratings is adjusted by scale factors to give values for the PA Score that range from zero through 100.

The Peer Assessed Score is an **essential factor** used as the basis for calculating several alternative measures of Personal Result including the Peer Assessed Index (PA Index), Indexed Personal Result (IPR), Normalised Personal Result (NPR), and Rank Based Personal Result (RPR).

The self-assessment is excluded from calculating PA Score

The self-assessment conducted by a team-member is EXCLUDED from the calculation of their Peer Assessed Score. The self-assessment, **PA (self)**, is used to enable the student to compare their self-perception with that of their team members, and the class as a whole. One method of comparison, the IRSA, is based on the ratio $PA\ Score\ /\ PA\ (self)$ as detailed in the FAQ:

FAQ: How is the Index of Realistic Self Assessment (IRSA) calculated?

Mathematical definition of Peer Assessed Score, PA Score

There are ten Peer Rating components $Peer\ Rating\ r_{as}$ awarded by each Assessor, a, to each Assessee, s, in the team of t members. The mathematical task is to combine all these ratings into one Peer Assessed Score for each team member.

The Peer Assessed SubScore $PA\ SubScore_{as}$ is defined as the peer assessment score awarded by Assessor a to Assessee s:

$$PA\ SubScore_{as} = (100 / 40) \sum_{r=1}^{r=10} (Peer\ Rating\ r_{as} - 1)$$

$$= 2.5 \sum_{r=1}^{r=10} (Peer\ Rating\ r_{as}) - 25$$

Where

> $Peer\ Rating\ r_{as}$ = the Peer Rating for each of the ten peer assessment components, r, submitted by the Assessor a for the assessed team member, the Assessee, s. **The student's self-assessment is excluded** from the calculation of the PA Score. The **Recommendation** rating is excluded from calculation of the PA Score.

To ensures the PA Score ranges from zero through 100 the following features are required in the above formula:

- Since each rating is on a scale of 1 through 5, then 1 must be deducted from each rating to give a scale of zero through 4.
- The scale factor (100/40 = 2.5) achieves the required range of zero through 100 for the calculated PA Score.

The Peer Assessed Score, $PA\ Score_s$ for team members s is the mean of the PA Subscores awarded by the other (t - 1) team members to the team member s.

$$PA\ Score_s \quad = \ 1\ /(\ t - 1\ )\ \sum_{a\ =\ 1}^{a\ =\ t-1}\ (\ PA\ SubScore_{as}\ )$$

Where

t = the number of team members in the team in which s is a team member.

$PA\ SubScore_{as}$ = the peer assessment score awarded by Assessor a to Assessee s, mathematically defined earlier.

Note that Peer Assessed Score takes NO account of the team's **Team Result**. The Team Result is accounted for in the Indexed Personal Result (IPR), Normalised Personal Result (NPR) and Rank-Based Personal Result (RPR) methods discussed elsewhere.

An example calculation is shown below. In the first table, the team member Bridget (ASSESSEE) is rated by her three team members (ASSESSORS), plus her own self-rating. The subsequent tables show the calculation of the Peer Assessment Score for all four team members based on all team members' assessment ratings. The long-form calculations show in detail the arithmetic calculations.

Quick links and related information

FAQ: What questions are asked in the peer assessment survey?

FAQ: How do students know where and when to complete the peer assessment activity then review their results?

Alternative but equivalent methods for calculating the Peer Assessed Score are detailed below in the section:

Alternative mathematical formulations of PA Score

Example table of assessments for assessed team member Bridget

ASSESSEE: Bridget		ASSESSOR: Ratings by team member:				
Team Name: Kubla		Bridget (Self)				
			Julian			
				Lydia		
					Nigella	
						Mean Rating
Contribution to Task Accomplishment						
	Rating scale: 1 = Almost never, 2 = Seldom, 3 = Average, 4 = Better than most, 5 = Outstanding					
Initiative	Shows initiative by doing research and analysis. Takes on relevant tasks with little prompting or suggestion.	5	5	3	1	9/3
Attendance	Prepares for, and attends scheduled team and class meetings.	4	4	4	1	9/3
Contribution	Makes positive contributions to meetings. Helps the team achieve its objectives.	4	5	5	1	11/3
Professionalism	Reliably fulfils assigned tasks. Work is of professional quality.	4	3	4	1	8/3
Ideas and learning	Contributes ideas to the team's analysis. Helps my learning of course and team project concepts.	5	5	5	1	11/3
Contribution to Leadership and Team Processes						
Focus and task allocation	Keeps team focused on priorities. Facilitates goal setting, problem solving, and task allocation to team members.	5	5	3	1	9/3
Encourages contribution	Supports, coaches, or encourages all team members to contribute productively.	4	4	4	1	9/3
Listens and welcomes	Listens carefully and welcomes the contributions of others.	5	5	3	1	9/3
Conflict management and harmony	Manages conflict effectively. Helps the team work in a harmonious manner.	4	4	4	1	9/3
Chairmanship	Demonstrates effective leadership for the team. Chairs meetings productively.	5	5	5	1	11/3
SubTotal	SubTotal = Task + Leadership	45	45	40	10	# 95/30 (3.167)
Peer Assessed Score	PA Score = (2.5 x SubTotal) - 25	* 87.5	87.5	75	0	54.2

* The self-assessment ratings are excluded from calculation of the PA Score. So, 54.2 = (87.5 + 75 + 0) / 3
# Alternatively, PA Score = (25 x Mean Rating) - 25. So, 54.2 = 25 x 95/30 - 25 = (25 x 3.167) - 25

Example calculations of Peer Assessed Score

Suppose that the Peer Assessed Scores determined from all four team members rating each other appear as follows. **Bridget's** PA Scores are copied from the previous table, forming the second vertical column here.

Since

$$PA\ SubScore_{as} = 2.5 \sum_{r=1}^{r=10} (Peer\ Rating\ r_{as}) - 25$$

Now consider the Assessment by Lydia of Bridget

$$PA\ SubScore_{LydiaBridget} = 2.5 \sum_{r=1}^{r=10} (Peer\ Rating\ r_{LydiaBridget}) - 25$$

$$= 2.5 \times (3 + 4 + 5 + 4 + 5 + 3 + 4 + 3 + 4 + 5) - 25$$

$$= (2.5 \times 40) - 25$$

$$= 100 - 25$$

$$= 75$$

In the previous table, note how Nigella rated Bridget with the minimum possible rating of one for all ten components. By definition, that gives a PA Score of zero. Similarly, if an assessor had rated a team member the maximum rating of five across all ten components, then a PA Score of 100 would have resulted.

Peer Assessed Sub-Scores for a team of four members

	ASSESSEE			
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**
Bridget	87.5	62.5	75	72.5
Julian	87.5	92.5	87.5	82.5
Lydia	75	82.5	77.5	80
Nigella	0	77.5	82.5	82.5

Now the PA Score for each ASSESSEE team member is calculated from the mean of the PA SubScores provided by the other ASSESSORS in their team, as shown in the following table. **The self-assessments of each ASSESSOR are excluded from the calculation**. For example, the PA Score for Nigella is determined as follows from the ratings by her three teammates Bridget, Julian and Lydia:

Since

$$PA\ Score_s = 1/(t-1) \sum_{a=1}^{a=t-1} (PA\ SubScore_{as})$$

Then for Nigella

$$PA\ Score_{Nigella} = 1/(t-1) \sum_{a=1}^{a=Bridget,\ Julia,\ Lydia} (PA\ SubScore_{aNigella})$$

$$= 1/(4-1) \times (72.5 + 82.5 + 80)$$

$$= 1/3 \times (72.5 + 82.5 + 80)$$

$$= 1/3 \times 235$$

$$= 78.3$$

Calculation of Peer Assessed (PA) Scores for a team of four members

	ASSESSEE			
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**
Bridget	-	62.5	75	72.5
Julian	87.5	-	87.5	82.5
Lydia	75	82.5	-	80
Nigella	0	77.5	82.5	-
Peer Assessed Score	54.2	74.2	81.7	78.3

Note how Nigella's rating of Bridget (PA Score = 0) seems an outlier when compared with the much higher ratings given by Julian and Lydia (7.5 and 75). Peer Assess Pro warns the teacher when outlier ratings like this occur.

This outlier issue is discussed in

FAQ: How is an outlier peer assessment rating identified?

Alternative mathematical formulations of PA Score

The following equations provide the identical mathematical result for the calculation of PA Score.

Calculation from Average Rating

$$\begin{aligned} PA\ Score_s &= (100 / 4) \times (Average\ Rating_s - 1) \\ &= 25 \times Average\ Rating_s - 25 \end{aligned}$$

Where:

> Average Rating is the average rating of an assessed student s averaged over all the ten components of the rating for that student, by their team members. The Average Rating lies between 1 and 5.
>
> The factor (-1) adjusts the Average Rating value to zero through 4. The scale factor 100 /4 adjusts the PA Score to lie between zero and 100.

Notice from the first table showing ratings of Bridget that the average rating across all ten components contributing to her Peer Assessment Score given by her three team members was shown as $3.167 = (95 \div 3) / 10$.

Therefore, the PA Score is calculated directly from the average rating:

$$\begin{aligned} PA\ Score_s &= 25 \times Average\ Rating_s - 25 \\ &= 25 \times 3.167 - 25 \\ &= 79.175 - 25 \\ &= 54.2 \end{aligned}$$

Calculation from Average Team and Leadership Contributions

Finally,

$$PA\ Score_s = (50/4)(ATC_s - 1) + (50/4)(ALC_s - 1)$$

$$= 12.5\,(ATC_s + ALC_s - 2)$$

$$= 12.5\,(ATC_s + ALC_s) - 25$$

Where:

> ATC and ALC are the average ratings for the five components that comprise the Task and Leadership contributions, respectively.

Mathematically:

$$ATC = (1/5)\sum_{rt=1}^{rt=5}(Peer\ Rating\ for\ Task\ Contribution\ component,\ rt)$$

$$ALC = (1/5)\sum_{rl=6}^{rl=10}(Peer\ Rating\ for\ Leadership\ Contribution\ component,\ rl)$$

ATC and ALC range over the values 1 through 5. The factor (-1) adjusts those values from zero through 4. The scale factor 50/4 (= 12.5) ensures that the PA Score achieves a range from zero to 100.

Quick links and related information

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

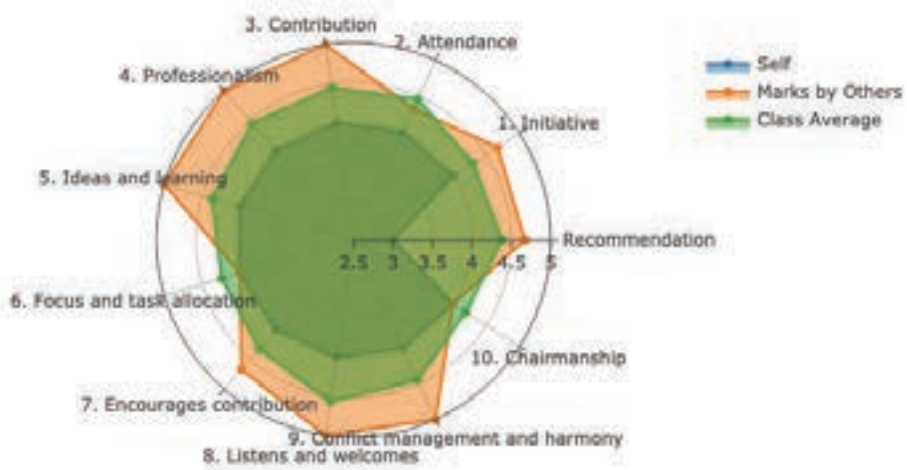
FAQ: How is the self-assessment used to calculate Peer Assessed Score?

The self-assessment conducted by a team-member when they rate their team members is **EXCLUDED** from the calculation of that team member's **Peer Assessed Score**. Instead, their self-assessment, **PA (self)**, is used to enable the team member to compare their self-perception with that of their team members, and the class as a whole. This comparison is provided to the team member through a SPider Chart and the calculation of their Index of Realistic Self Assessment (IRSA).

Spider chart of individual and averaged team peer ratings

The Spider Chart shows each of their eleven ratings provided by themself, compared with the average of the ratings provided to them by their peer team members. The class average ratings for each of the 11 factors are also provided. In this example, the team member has significantly UNDERRATED themself on nearly all factors (innermost plots), when compared with the ratings provided by their team members (orange).

Spider Chart comparison of self and other team members' contribution ratings



Index of Realistic Self-Assessment (IRSA)

Another method of comparison, the IRSA, is based on the ratio

$$IRSA = 100 \times PA\ Score\ /\ PA\ (self)$$

as detailed in the FAQ:

FAQ: How is the Index of Realistic Self Assessment (IRSA) calculated?

For the team member illustrated in the foregoing Spider Chart, their Peer Assessed Score, PA Score, is 92 and their self-assessed Score, PA (self), is 75. The ratio results in the Index of Realistic Self Assessment (IRSA) 122 = 100 x 92 / 75.

An IRSA between 75 and 95 is typical of about 2/3 of team members in a class. About ⅙ of team members achieve an IRSA below 75. Such people appear to assess their team members excessively OVERCONFIDENT in their abilities. In contrast, an IRSA above 95 suggests the team member has a tendency to UNDERESTIMATE their team contribution when contrasted with the assessment perceived by their team members.

Quick links and related information

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: How is the Peer Assessed Index (PA Index) calculated?

The Peer Assessed Index is defined such that **the team member with the maximum PA Score for each team is assigned a PA Index of 100**. All other team members in the **same team** are scaled in relation to the maximum PA Score for that group.

In a gradebook of results, the PA Index is useful for identifying the team members most highly rated by their peers, as they have PA Indexes in the 90 to 100 range. In combination with the Team Result, the PA Index is used to calculate the Indexed Personal Result, (IPR), Normalised Personal Result, (NPR) and Rank-Based Personal Result (RPR).

Mathematical definition of Peer Assessed Index

$$PA\ Index_s = 100 \times PA\ Score_s \,/\, max(PA\ Score_t)$$

Where

> $PA\ Score_s$ = the Peer Assessed Score for a team member s in team t, as defined in: FAQ: How is the Peer Assessed (PA) Score calculated?
>
> $max(PA\ Score_t)$ = the maximum value of PA Score found across all members in team t.

Example calculations of Peer Assessed Index

Consider a team of four team members, whose PA Scores are shown in the following table. **Lydia** has a PA Score of 82, the highest for the team. Therefore, Lydia's PA Index is 100, by definition.

Calculation of Peer Assessed Index (PA Index) for a team of four members

	ASSESSEE			
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**
Bridget	-	62.5	75	72.5
Julian	87.5	-	87.5	82.5
Lydia	75	82.5	-	80
Nigella	0	77.5	82.5	-
Peer Assessed Score	54	74	82	78
Peer Assessed Index	66	90	100	95

Bridget has a PA Score of 54, the lowest for the team. Therefore, since

$$PA\ Index_s = 100 \times PA\ Score_s\ /\ max(PA\ Score_t)$$

$$PA\ Index_{Bridget} = 100 \times 54\ /\ 82$$

$$= 66$$

Note that, as expected

$$PA\ Index_{Lydia} = 100 \times 82\ /\ 82$$

$$= 100$$

The data for the previous table is drawn from

FAQ: How is the Peer Assessed (PA) Score calculated?

Quick links and related information

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: How is the Indexed Personal Result (IPR) calculated?

The Indexed Personal Result (IPR) is calculated from the Team Result (TR) combined with the team member's specific Peer Assessed Index (PA Index). The Indexed Personal Result method awards the Team Result to the TOP RATED team member in the team, since, by definition, their Peer Assessed Index is 100. All remaining team members in the same team earn the Team Result downwards, directly proportional to their PA Index.

The definition of Indexed Personal Result means that NO team member can earn an Indexed Personal Result greater than the Team Result. That is, values for the Indexed Personal Result range from zero up to the Team Result. Consequently, the IPR disadvantages team members who have been rated unfavourably by their peers. However, no reward is made for the team member(s) who have been rated as the most contributing team members. In contrast, the Normalised Personal Result and Rank-Based Personal Result do award a Personal Result above the Team Result for those team members who contribute above average to the team's outputs, as assessed by their peers.

Mathematical definition of Indexed Personal Result

For each team member s, in their team, t

$$IPR_s = Team\ Result_t \times PA\ Index_s / 100$$

Where

$Team\ Result_t$= the team result awarded by the teacher for the outputs of team t

$PA\ Index_s$= the Peer Assessed Index for the team member s, as defined in

FAQ: How is the Peer Assessed Index (PA Index) calculated?

Example calculations of Indexed Personal Result

Suppose that the following team has a Team Result, TR, of 50 and Peer Assessed Indexes previously calculated as follows. The example data is taken from:

FAQ: How is the Peer Assessed Index (PA Index) calculated?

Calculation of Indexed Personal Result in a team of four members

	ASSESSEE			
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**
Peer Assessed Score, PA Score	54	74	82	78
Peer Assessed Index, PA Index	66	90	100	95
Team Result, TR	50	50	50	50
Indexed Personal Result, IPR	33	45	50	47.5

Bridget has a PA Index of 66, the lowest for the team. Therefore, since

$$IPR_s = Team\ Result_t \times PA\ Index_s / 100$$

$$IPR_{Bridget} = 50 \times 66 / 100$$

$$= 33$$

In contrast, **Lydia** has the highest PA Score in the team, and hence a PA Index of 100. Therefore

$$IPR_{Lydia} = 50 \times 100 / 100$$

$$= 50$$

The IPR for Lydia is equivalent to the Team Result, 50, as defined.

Quick links and related information

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: How is the Peer Assessed Index (PA Index) calculated?

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: How is the Normalised Personal Result (NPR) calculated?

The Normalised Personal Result, NPR, is calculated from the Team Result combined with the team member's specific Indexed Personal Result (IPR). The Normalised Personal Result method awards the **average** student in the team the Team Result (TR). All remaining students are awarded a Personal Result **above** or **below** the Team Result depending on whether their IPR is above or below that team's average IPR.

Features of the Normalised Personal Result method are that

- In contrast to the IPR method, the Normalised Personal Result method calculates a Personal Result **above** the Team Result for the team members peer rated above-average in the team
- The **average** of the team's Normalised Personal Results will match that team's Team Result
- The **spread** of the team's Normalised Personal Results matches the spread of the Indexed Personal Results (IPR) that is calculated for that team. Spread is measured by the standard deviation statistic.
- The teacher can choose to ***stretch*** the spread, as explained later, using a **spread factor**. A higher spread factor increases the rewards to the more highly peer assessed team members in the team, whilst conversely applying a greater penalty to poorly assessed team members.

Use the Normalised Personal Result method with a high Spread Factor if you

- Consider your class of students tends to be cautious in peer assessing positively the team members who contribute especially well to their teams
- Consider your class of students tend to be cautious in peer assessing negatively the team members who contribute especially poorly to their teams
- Want to signal strongly that significantly above average contribution to team work is acknowledged and rewarded by the teacher
- Want to signal strongly that significantly below average contribution to team work is noticed and penalised by the teacher

Mathematical definition of Normalised Personal Result

For each team member s, in their team, t

$$NPR_s = TeamResult_t + Correction\ Factor_s$$

Where

$TeamResult_t$ = the team result awarded by the teacher for the outputs of team t

$$Correction\ Factor_s = (IPR_s - mean\ IPR_t) \times Spread\ factor$$

IPR_s = $Indexed\ Personal\ Result\ for\ student\ s\ in\ team\ t$.

$$mean\ IPR_t = (1/n) \times \sum_{1}^{n} IPR_s$$

That is, the mean value of the IPR values found for team t, containing n team members.

$Spread\ Factor$ = a factor chosen optionally by the teacher that will S T R E T C H each team's intrinsic spread of NPRs, as measured by the team's standard deviation of NPR results. The default Spread Factor is 1.0. However a Spread Factor of between 1.5 and 2.0 is recommended.

Values of NPR are trimmed to be within the range zero to 100.

Example calculations of Normalised Personal Result

Suppose that the following team has a Team Result, TR, of 50 and Indexed Personal Result previously calculated as follows. This first example illustrates a Spread Factor of 2.0. The example data is taken from:

FAQ: How is the Indexed Personal Result (IPR) calculated?

Calculation of Normalised Personal Result in a team of four members

Spreadfactor = 2.0

	ASSESSEE				
ASSESSOR	Bridget	Julian	Lydia	Nigella	Mean
Peer Assessed Score, PA Score	54	74	82	78	
Peer Assessed Index, PA Index	66	90	100	95	
Team Result, TR	50	50	50	50	
Indexed Personal Result, IPR	33	45	50	48	44
Correction Factor (Spreadfactor = 2)	-22	+2	+12	+8	0
Normalised Personal Result, NPR (Spreadfactor = 2)	28	52	62	58	50

Bridget has a PA Index of **66**, the lowest for the team.

The $mean\ IPR_t$ for the four-member team is **44**, calculated from ¼ x (33 + 45 + 50 + 48).

Since

$$NPR_s = Team\,Result_t + Correction\ Factor_s$$

$$Correction\ Factor_s = (IPR_s - mean\ IPR_t) \times Spread\ Factor$$

Then

$$Correction\ Factor_{Bridget} = (33 - 44) \times Spread\ Factor$$
$$= -11 \times 2.0$$
$$= -22$$

$$NPR_{Bridget} = 50 + Correction\ Factor_{Bridget}$$
$$= 50 + (-22)$$
$$= 28$$

In contrast, the Normalised Personal Result for **Lydia,** with her IPR of 50, is calculated as follows:

$$Correction\ Factor_{Lydia} = (50 - 44) \times Spread\ Factor$$
$$= 6 \times 2.0$$
$$= +12$$
$$NPR_{Lydia} = 50 + Correction\ Factor_{Lydia}$$
$$= 50 + 12$$
$$= 62$$

Note how Lydia's NPR of 62 is above the team Result of 50. Note also how the mean of the NPR values across the team is 50 = (28 + 52 + 62 + 58)/4, identical to the Team Result of 50.

Impact of adjusting the Spread Factor on Normalised Personal result

The previous example showed calculations of NPR using a Spread Factor of 2.0. The following table shows the results of calculating the Normalised Personal Result for the team using a more modest Spread Factor of 1.0.

Note the following:

- Bridget achieves an NPR of 39 using a Spread Factor of 1, compared with her achieving the lower NPR of 28 when using a Spread Factor of 2
- In contrast, Lydia's NPR is raised from 56 to 62 when using a Spread Factor of 2
- The higher Spread Factor of 2 **increased the range of NPR values** in the team from 17 (= 56 - 39) to 34 (= 62 - 28), a doubling of spread.
- The **mean value of the NPRs** earned by the team remains the same under both Spread Factors, and is exactly the same as the Team Result, 50.

The default Spread Factor is 1.0. However a Spread Factor of between 1.5 and 2.0 is recommended.

Calculation of Normalised Personal Result in a team of four members

SpreadFactor = 1.0

	ASSESSEE				
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**	**Mean**
Peer Assessed Score, PA Score	54	74	82	78	
Peer Assessed Index, PA Index	66	90	100	95	
Team Result, TR	50	50	50	50	50
Indexed Personal Result, IPR	33	45	50	48	44
Correction Factor (SpreadFactor = 1)	-11	+1	+6	+4	0
Normalised Personal Result, NPR (SpreadFactor = 1)	39	51	56	54	50

Quick links and related information

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: How is the Peer Assessed Index (PA Index) calculated?

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: How is the Rank Based Personal Result (RPR) calculated?

The Rank Based Personal Result is calculated from the Team Result combined with the student's specific Rank Within Team based on that student's Peer Assessed Score. Like the Normalised Personal Personal Result the RPR method awards the AVERAGE student in the team the Team Result. All remaining students are awarded a personal result above or below the Team Result depending on whether their Rank Within Team is above or below that team's middle-ranked student.

Features of the Rank Based Personal Result (RPR) calculation method are that

- A team's RPR values are **range much wider** than the NPR and IPR methods. Small differences in PA scores within a team are amplified significantly by this method
- In contrast to the Indexed Personal result (IPR) method, **the RPR method calculates a Personal Result significantly ABOVE the Team Result** for the top ranked student in the team
- Like the Normalised Personal Result (NPR) method, **the mean of the team's RPR values matches the Team Result.** Values for the Rank Based Personal Result range from zero to 100. Calculations that exceed these ranges are clipped to fit within the range zero to 100.
- Conceptually, the team results are imagined as the key ingredient for a cake related in size to the number of team members. The cake is next sliced into **equal sized** pieces of cake. Each member of the team is awarded one or more pieces of cake. The most poorly rated team member, measured by Peer Assessed Score, receives one piece of cake. The next best team member receives two pieces of cake, and so forth. There are no part-sizes of cake allocated.

Mathematical definition of Rank-Based Personal Result

For student s in their team t with n team members

$$RPR_s = ShareFraction_s \times TeamResult_t \times n$$

Where

$TeamResult_t$ = the team result awarded by the teacher for the outputs of team t

$$ShareFraction_s = Rank_s \,/\, \sum_{x=1}^{x=n} Rank_x$$

$Rank_s$ = the reversed rank of the team member s in team t where the team member with the lowest Peer Assessed Score in that team is defined as 1. Equal ranks are permitted.

Values of RPR are trimmed to be within the range zero to 100.

Example calculations of Rank-Based Personal Result

Suppose that the following team has a Team Result, TR, of 50 and Peer Assessed Scores previously calculated as follows. The example data is taken from:

FAQ: How is the Peer Assessed (PA) Score calculated?

Calculation of Rank-Based Personal Result in a team of four members

	ASSESSEE				
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**	**Mean**
Peer Assessed Score, PA Score	54	74	82	78	
Rank (Reversed)	1	2	4	3	
Share Fraction	1/10	2/10	4/10	3/10	
Team Result, TR	50	50	50	50	50
Rank-Based Personal Result, RBR	20	40	80	60	50

First calculate the **sum of ranks** for the team of four members, n = 4. This number is the denominator for calculating the ShareFraction for each team member.

$$\sum_{x=1}^{x=4} Rank \quad = 1 + 2 + 4 + 3$$

$$= 10$$

Consequently, there are **10 'pieces of cake'** to be shared amongst the 4 team members, in proportion to their reversed rank.

Bridget has a PA Score of **64**, the lowest for the team. Her rank in the team, $Rank_{Bridget}$ is therefor 1.

$$ShareFraction_{Bridget} = Rank_{Bridget} / \sum_{x=1}^{x=4} Rank_x$$

$$= 1 / 10$$

$$RPR_{Bridget} = ShareFraction_{Bridget} \times TeamResult_t \times n$$

$$= (1/10) \times 50 \times 4$$

$$= 20$$

Note how the second-ranked student, **Julian** receives double the ShareFraction, and, consequently, double the RPR than does Bridget

$$RPR_{Julian} = ShareFraction_{Julian} \times TeamResult_t \times n$$

$$= (2/10) \times 50 \times 4$$

$$= 40$$

Lydia, the top-ranked student, $Rank_{Lydia} = 4$, receives four times the RBR that Lydia received, $RPR_{Lydia} = 80$.

Note how the **mean of the RBR value**s matches the Team Result for team t of 50.

$$mean\ RPR_t = (1/n) \sum_{x=1}^{x=n} RBR_x$$

$$= (1/4) \times (20 + 40 + 80 + 60)$$

$$= (1/4) \times 200$$

$$= 50$$

Note that, by definition, the sum of the ShareFractions across the team is exactly 100 %.

Quick links and related information

FAQ: How do I decide which Personal Result method to apply in my peer assessment activity?

FAQ: How is the Peer Assessed Index (PA Index) calculated?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: How is Standard Peer Assessed Score (SPAS) calculated?

How do we compare students within a class, and between classes based on their Peer Assessed Scores?

The **short answer** is: We can use the Peer Assessed Score to compare students ONLY within their team. A higher PA Score within a team suggests that team member has contributed more than a team member with a lower PA score.

A Peer Assessed Score of 90 clearly indicates that a student in the same team has contributed more to their teams outcomes than a student in the same team with a Peer Assessed Score of 30. However, a Peer Assessed Score achieved by a student in one team does not meaningfully compare with the Peer Assessed Score of a student in another team. A Peer Assessed Score of 60 is no better nor worse than a PA Score of 90 achieved by a student in another team. **We cannot conclude from comparing the Peer Assessed Score which is the better student in terms of team contribution and/or leadership when the students are from different teams.** Why? Some students and teams diligently commit to rating each other so the average student in their team does rate **3⁄5** on each of the ten item in the peer assessment survey, as intended. Meanwhile, other teams believe they are all above average, having come from their local equivalent of Lake Wobegon. By chance and/or good team functioning, some teams achieve that desired state where all members work productively and effectively together: the Holy Grail of the Dream Team. Other teams comprising high performers can conversely fall into the desolation of dismal performance characterised by the Apollo Syndrome (Belbin).

The **long answer** is that through applying appropriate data analytics, we can develop three related numbers that enable comparison of peer assessed team members both within and between classes, and over time. These measures are **Standard Peer Assessed Score** (SPAS), **Employability**, and **Net Employability**. In essence, the data analytic processes can be likened to a forensic photoanalyst attempting to read an automobile's number plate. Imagine the original photo image has been photographed through smog, on a dark night, from a far distance, with a low resolution setting, using a poor quality lense and poor imaging sensor. But through advanced algorithms that remove background noise, amplify relevant signals, and enhance clarity, a readable, useful image can be discerned, as illustrated in the example of from Acclaim Software

Source: Acclaim Software. (2015). Forensics - Recovering the Most Detail from Your Image - Focus Magic. http://www.focusmagic.com/forensics-tutorial.htm

The **Standard Peer Assessed Score** (SPAS) is our first measure designed to enable a more realistic relative comparison of peer assessment ratings between members of a whole class. The Standard Peer Assessed Score combines normalised values of the Recommendation and Peer Assessed Score for each team member. The normalisation applies several data analytic process to correct for the biases introduced by some students and teams in their rating. The SPAS approach is not perfect, but it's a start. Furthermore, the determination of **Standard Peer Assessed Score** is a necessary precursor to the calculation of **Employability** and **Net Employability**, discussed elsewhere.

Design features of Standard Peer Assessed Score

The whole-of-class values of Standard Peer Assessed Score for a particular class response dataset are targeted to have these features:

Mean: 50

Standard Deviation: 20

Maximum possible range: from 0 to 100

By virtue of the definition of the Standard Peer Assessed Score, the following effects occur by design:

One half of the class values of Standard Peer Assessed Score will fall in the range zero to 50 (below the target average). Naturally, the remaining one half of values will fall in the range 50 to +100 (above average).

Approximately **⅔** of Standard Peer Assessed Scores in the class will lie between 30 and 60. That is, within one standard deviation of the mean value of 50. More accurately, if SPAS was normally distributed, then 68.3 percent of the class dataset values of SPAS will lie between plus and minus one standard deviation of the mean.

Approximately **⅙** of students in the class will receive a Standard Peer Assessed Score value of either greater than 60, or less than 30. More precisely, 15.9 percent of values will lie in each of these ranges.

Finally, given the wonders of the normal distribution, 95% of all class members will lie in the range of SPAS 10 through 90. That implies that a student with a SPAS above 90 is in the top 2.5 % of members of the class. Conversely a student with SPAS less than 10 is in the bottom 2.5% of the class. This knowledge allows the teacher to more reliable identify their **star students**, and **students at risk**, rather than relying simply on Peer Assessed Score.

Mathematical calculation

The general approach to creating the Standard Peer Assessed Score is to apply **z-score normalisation** to a student's (raw) Recommendation, R and Peer Assessed Score, PAS. The two z-scores (z_R , z_{PAS}) are added, then re-scaled to achieve, for the class dataset as a whole, the target mean, μ_T of 50, and target standard deviation, σ_T of 20 required for the SPAS statistic. Note that the result of z-score normalisation for any datset is such that the normalised data has a mean of zero and standard deviation of 1.0, detailed later.

The Standard Peer Assessed Score for student s is defined as

$$SPAS_s = \mu_T + \lambda_\sigma \sigma_T (z_{R_s} + z_{PAS_s}) / 2$$

Where

μ_T = Target mean for the SPAS statistic, by definition a constant of 50

σ_T =Target standard deviation for the SPAS statistic, by definition a constant of 20

λ_σ = a correction factor to ensure the standardisation process achieves the target standard deviation, σ_T. The factor is required because in practice the distributions of the raw data are not normally distributed, but tend to have strong negative skew, due to such factors as the Lake Wobegon effect mentioned earlier. A factor of 1.2 has been found appropriate in practice.

$$z_{R_s} = (R_s - \mu_R) / \sigma_R$$

= The z-score normalisation of the Recommendation rating R_s for student s by their team members.

$$z_{PAS_s} = (PAS_s - \mu_{PAS_t}) / \sigma_{PAS_t}$$

= The z-score normalisation of the Peer Assessed Score rating PAS_s for student s by their team members.

R_s = Recommendation rating awarded to student s by their team members in team t

PAS_s = Peer Assessed Score awarded to student s by their team members in team t

μ_R = estimate of the class mean Recommendation rating derived over all valid assessed teams in the class responses dataset

σ_R = estimate of the class standard deviation of the class Recommendation ratings derived over all valid assessed teams in the class responses dataset

μ_{PAS_t} = the population mean of the Peer Assessed Scores derived over all team members in the team t in which student s is a member.

σ_{PAS_t} = the population standard deviation of the Peer Assessed Scores derived over all team members in the team t in which student s is a member.

Notes

Divisor of 2. The sum of the two z-score normalised functions, each with unit standard deviation, gives a resulting distribution with standard deviation of 2.0. Consequently the divisor of 2 is required in the calculation of SPAS so that $z_{R_s} + z_{PAS_s}$ has a mean of zero and standard deviation of 1.

Trimming. Values of Standard Peer Assessed Score that calculate above +100 are trimmed down to +100. Similarly, values of Standard Peer Assessed Score that calculate below 0 are trimmed up to 0.

Example calculations of Standard Peer Assessed Score

The following table shows example calculations of Standard Peer Assessed Score for three students in two teams, A and B. Note how Michael Mass (Team A) and Lydia Loaded (Team B) have both been awarded the same Peer Assessed Score of 50 by their team members. However, because of their different team means and standard deviations, the z-score normalisations z_{PAS_s} realise +1 and +2 respectively.

As part of the journey towards calculating SPAS, the intermediate calculations of the combined z-scores $z_{R_s+PAS_s}$ provide the basis for calculating the percentage proportion of the entire class who would fall below that combined z-score. This can be interpreted as the percentage of the class who would recommend the specific team member to an employee, a colleague, or another team. This percentage is rounded conservatively to produce the student's **Employability** rating, the detailed methodology for which is detailed in the FAQ

FAQ: What is Employability? How is it calculated?

Example calculations for Standard Peer Assessed Score (SPAS) and Employability

Student, s	Peter Johns	Michael Mass	Lydia Loaded
Recommendation, R_s	2.0	4.5	3.0
Mean of class Recommendation, μ_R	3.0	3.0	3.0
Standard deviation of class Recommendation, σ_R	0.5	0.5	0.5
Normalised Recommendation, $z_{R_s} = (R_s - \mu_R) / \sigma_R$	(2-3)/0.5 = -2	(4.5-3)/0.5 = +3	(3.0-3.0)/0.5 = 0
Peer Assessed Score, PAS_s	30	50	50
Team, t	A	A	B
Mean of team Peer Assessed Score, μ_{PAS_t}	40	40	20
Standard Deviation of of team Peer Assessed Score, σ_{PAS_t}	10	10	15
Normalised Peer Assessed Score, $z_{PAS_s} = (PAS_s - \mu_{PAS_t}) / \sigma_{PAS_t}$	(30-40)/10 = -1	(50-40)/10 = +1	(50-20)/15 = +2
Combined z-scores, $z_{R_s+PAS_s}$ $(z_{R_s} + z_{PAS_s}) / 2$	(-2-1)/2 = -1.5	(+3+1)/2 = +2	(0+2)/2 = +1
Target Standard Deviation, σ_T	20	20	20
Correction factor, λ_σ	1.2	1.2	1.2
Target mean, μ_T	50	50	50
Standardised Peer Assessed Score, SPAS $\mu_T + \lambda_\sigma \sigma_T (z_{R_s} + z_{PAS_s}) / 2$	50 + 1.2 x 20 x (-1.5) = 50 - 36 = 14	50 + 1.2 x 20 x 2 = 50 + 48 = 98	50 + 1.2 x 20 x 1 = 50 + 24 = 74
Proportion of class below Combined z-score $0.5 + GAUSS(z_{R_s+PAS_s})$	0.5 + GAUSS(-1.5) = 0.5 - 0.4332 = 6.9%	0.5 + GAUSS(+2) = 0.5 + 0.4772 = 97%	0.5 + GAUSS(+1) = 0.5 +0.34 = 84%
Employability	10	90	80

Example charts for Standard Peer Assessed Score

The following figures show a Standard Peer Assessed Score histogram, and the histograms for the Recommendation and Peer Assessed Score data that contribute to the Standard Peer Assessed Score chart.

Figure 1. Histogram of Recommendation

Mean = 3.7, standard deviation = 0.53

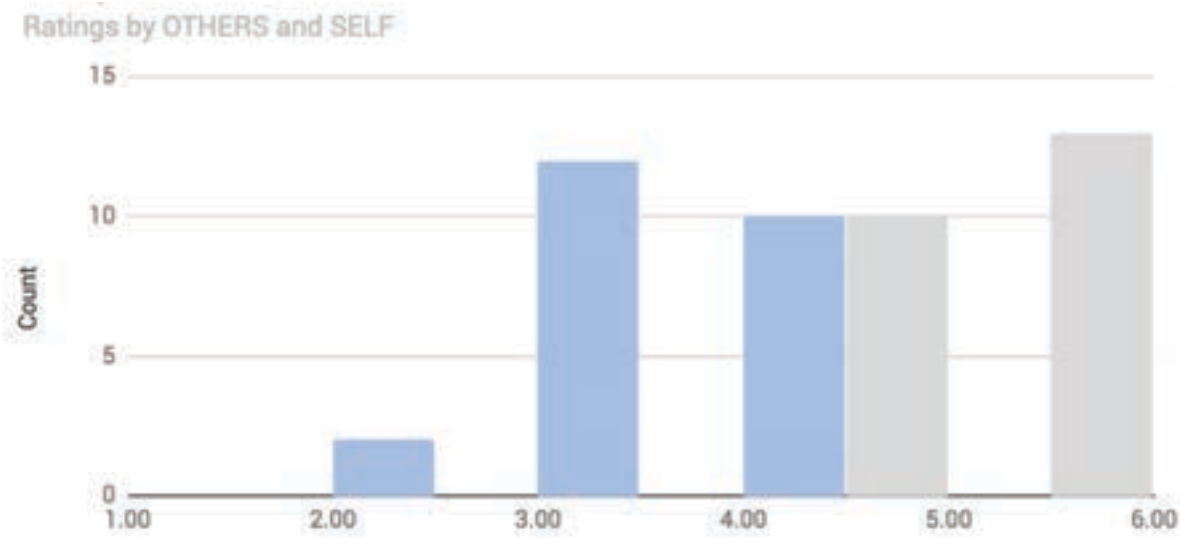


Figure 2: Histogram of Peer Assessed Score

Mean = 67, standard deviation = 11.3

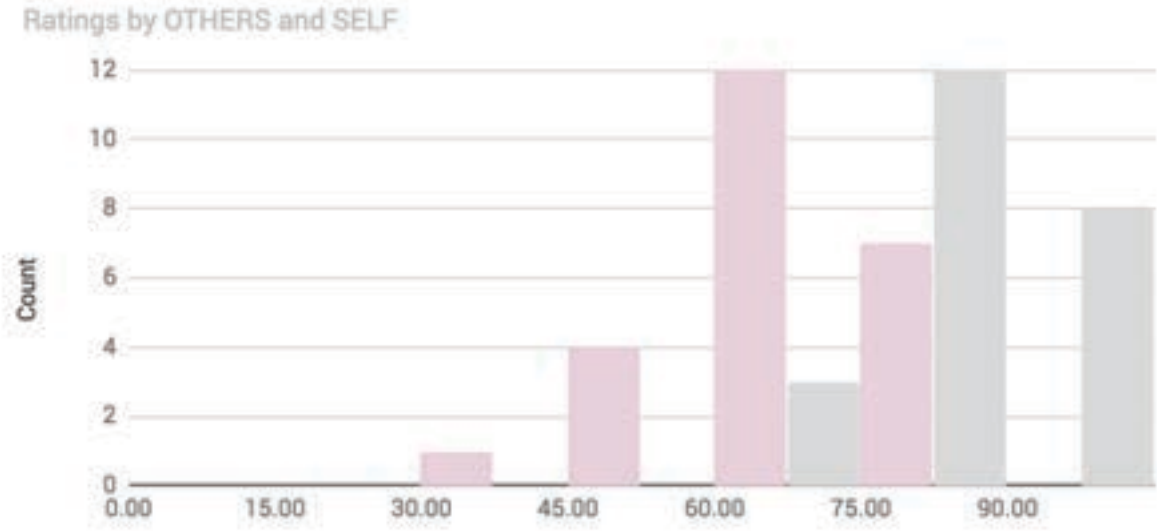
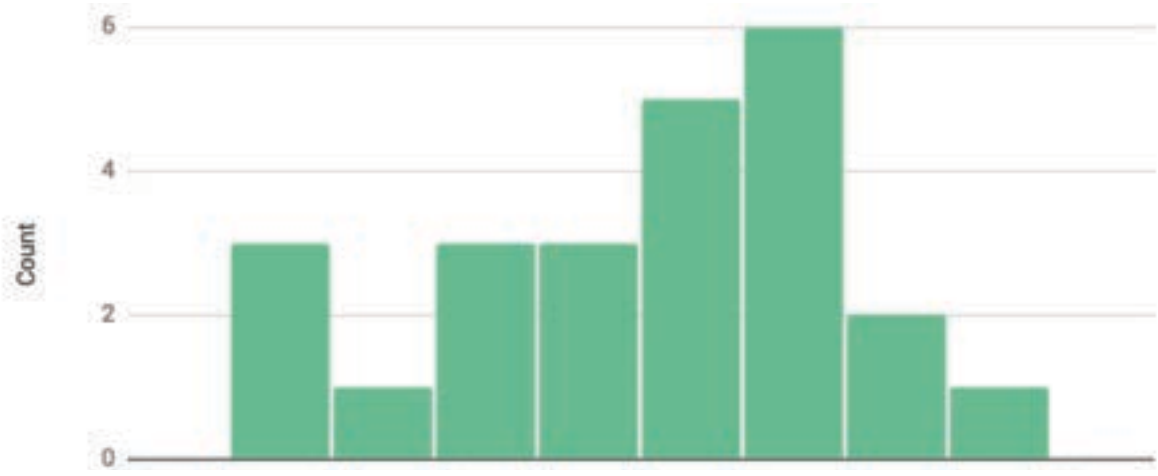


Figure 3: Standard Peer Assessed Score histogram

Mean = 0, Standard deviation = 20



Assumptions about Standard Peer Assessed Score

The calculation of Standard Peer Assessed Score assumes several conditions, described as follows.

The statistical distributions of the Recommendation and Peer Assessed Scores (PA_Score) are assumed to be normally distributed. In practice, the distributions are typically asymmetric with negative skew. See Figures 1 and 2 earlier.

The Recommendation score awarded to a student s1 in team t1 are assumed to be **absolutely comparable** to a similar Recommendation score awarded to another student s2 in another team t2. In other words, a Recommendation score of 3.5 awarded to student s1 in team t1 means exactly the same for student s2 in team t2 if they are also awarded a Recommendation score of 3.5. Similarly, a difference in Recommendation ratings of 1.0 unit means the same in any team. In practice, the Recommendations made by one team may not be consistent with the Recommendation values assigned by another team. However, given that Recommendation is a 'top of mind' peer assessment done at the start of the Peer Assess Pro survey, we think it is a reasonable approximation. Consequently, **the Recommendation values are z-score normalised using the mean and standard deviation of the entire class of responses.**

In contrast, in normalising the Peer Assessed Score it is well recognised that different teams award quite different Peer Assessed Scores to a students who would ordinarily achieve the same Peer Assessed Score in an ideal world of perfect

raters. Consequently, **it is assumed that each team possesses a uniform, random mix of student capabilities drawn from the entire class.** Therefore, all things being equal, one would expect that the mean and standard deviations of each team's Peer Assessed Score would be equivalent. However, in practice, this equivalence is rarely observed. Consequently, the need arises to z-score normalise the Peer Assessed Score for each team to achieve a set of nor aloised Peer Assessed Scores with mean zero and standard deviation 1 FOR EACH TEAM.

The impact of gaming peer assessment

The Peer Assessed Score awarded to a student s1 in team t1 is assumed NOT to be comparable to similar Peer Assessed Score that might be awarded to another student x in team y. Why? Some teams honestly peer assess each, whilst others attempt to 'game' the peer assessment process, such as awarding everyone above average, or even the full 5/5 rating for each of the team peer assessment factors. In contrast, it is assumed that the Peer Assessed Score of the average student sa in team t1 should be adjusted to match the peer rating of the average student rated in another team t2, even though the arithmetic value of the (original) Peer Assessed Scores usually differ. The same reasoning applies to the spread of Peer Assessed Score values within teams, namely, that the best team member s in team t1 should be rated comparably with the best team member in team t2, even if their Peer Assessed Score differ. Consequently, the Peer Assessed Scores WITHIN a team are scaled to match the relative values within other teams through normalisation using each team's mean and standard deviation.

FAQ: What is the influence on Standard Peer Assessed Score (SPAS) if a team rates ALL its members with a Peer Assessed Score of 100?

In that case, the z-score normalised Peer Assessed Score z_{PAS_s} for every team member is set to 0.5.

A Future option to consider: Exclude students from consideration for receiving calculation of their SPAS in the case of a '**misguided team**', identified as

- A team that has performed ineffectively in rating its team members, evidenced through awarding high Peer Assessed Scores and a low range of scores across the entire team, AND CONCURRENTLY
- A team that has received a relatively low Team Result from the teacher, when compared with the entire class Team Results.

FAQ: Would a student received the same Standard Peer Assessed Score (SPAS) if rated in another class?

In general, 'NO'. A student is motivated differently in each of the classes the take. The luck of the draw is that they may work with a superior or inferior team, who will rate them relatively differently.

Quick links and related information

FAQ: What is Employability? How is it calculated?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: What is Employability? How is it calculated?

For a specific Peer Assess Pro assessment, Employability is the statistical probability that team members from the class would recommend the specific team member to an employee, a colleague, or another team.

Employability is a proprietary measure defined by Peer Assess Pro™ drawn from the calculation of a student's Standard Peer Assessed Score (SPAS). SPAS combines a student's Peer Assessed Score and their Recommendation score, through various statistical treatments such as z-score normalisation. The resulting Employability score is a statistical probability, ranging from 5 to 95 percent. Employability is the best available estimate of the degree to which team members from the class in which the student has participated in a team project would recommend that specific team member to an employee, a colleague, or another team.

Mathematical calculation of Employability

$$Employability_s = MROUND(\,2.5 + 95 \times (0.5 + GAUSS(\,z_{R_s+PAS_s}\,)\,), 5)$$

Where

$Employability_s$= the employability for student s, ranging over values from 5 to 95 in steps of 5.

$GAUSS(z)$ = the Gaussian distribution. The statistical **probability** that a random variable, z, drawn from a normal distribution, will lie between the mean and z standard deviations above (or below) the mean. The GAUSS function returns values between -0.5 and +0.5

$z_{R_s+PAS_s} = (z_{R_s} + z_{PAS_s})\ /\ 2$ is the combined z-score resulting from combining the z-score normalisation of the Recommendation z_{R_s} and Peer Assessed Scores $+z_{PAS_s}$for student s, as explained in the mathematical calculations for the Stand Peer Assessed Score. Through the process of normalisation,

$z_{R_s+PAS_s}$ has a mean of zero, standard deviation 1, which is the required input for the GAUSS function.

$MROUND(x, m)$ is a mathematical function that rounds one number to the nearest integer multiple of another. In the case of Employability, m = 5. For example, $MROUND(7.4) = 5$ and $ROUND(37.5, 5) = 40$. The MROUND function coupled with the attenuation factor of 95 achieves a step interval of 5 units.

The constant 0.5, adds the probability that a z-score lies between minus infinity and the mean, which is, by definition, 50%.

Conditioning transformations to de-emphasise unsubstantiated precision

The following transformations are applied to remove the impression of an over-precise measure of Employability, and reduce the possibilities of elation or despair in response to extreme values of Employability. Specifically, we apply a Principle of Conservatism the result of which is that Employability is conditioned to lie between 5 to 95, and rounded to increase in steps of 5, rather than the theoretically possible values of zero to 100, with apparently infinite precision!

The MROUND to the closest multiple of 5 coupled with attenuation by 95 achieves the step interval of 5 units.

The constant 2.5 is a translation factor that compensates for the shift downwards in mean values on account of the 95 attenuation factor.

Example calculations of Employability

The following table shows example calculations for of Employability based on the most likely range of possible values for combined z-scores arising from the generation of Standardised Peer Assessed Score, SPAS

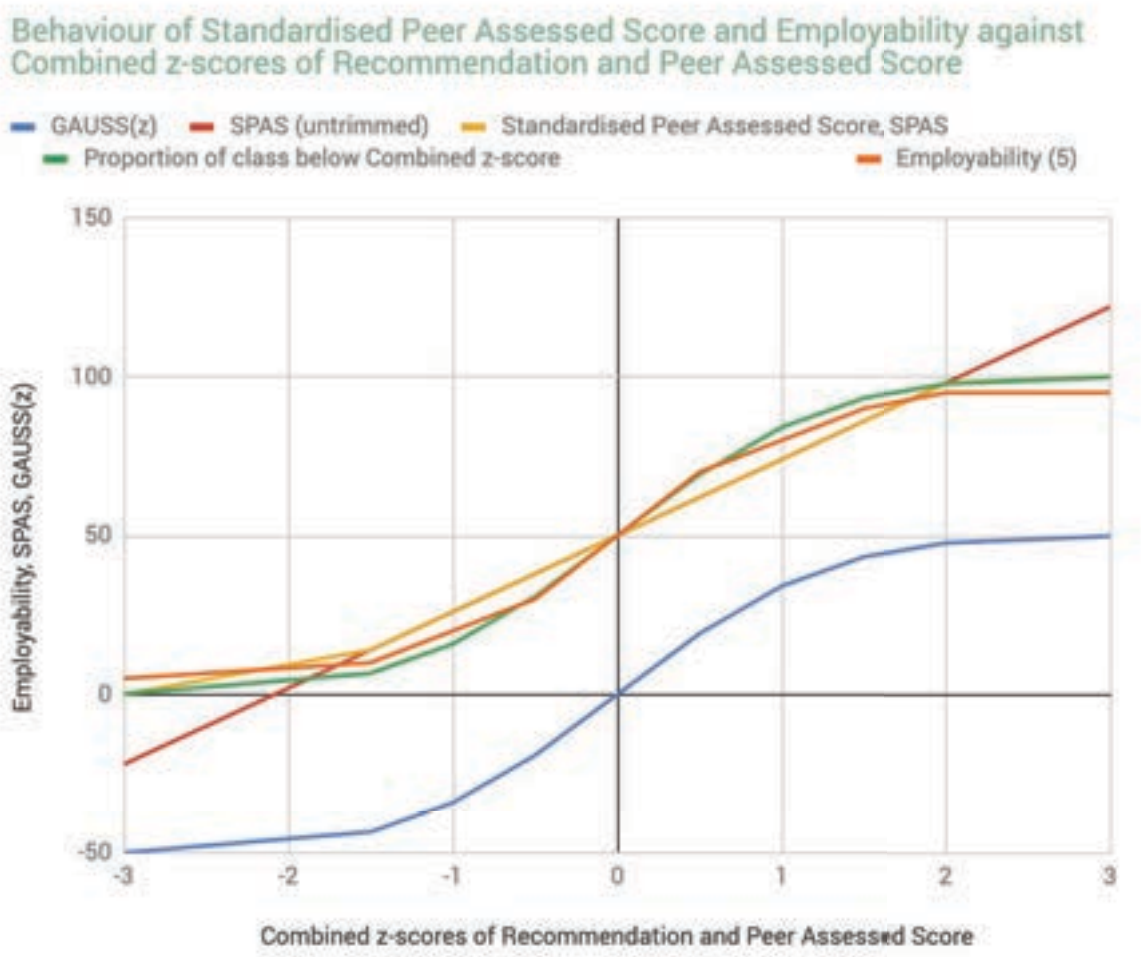
The subsequent graph shows the data from the calculations of Employability charted against Combined z-scores.

As an example, consider a student achieving a SPAS of zero, arising from their combined z-score of -3. According to the normal distribution, less than 1 in 1000 students would recommend this student, as indicated by the proportion of the

class who would fall below a combined z-score of -3. The calculation of Employability generously raises the assessment of the student suggesting that 5 % of the class would recommend them! The same conservativism happens at the other extreme, where a brilliantly contributing student (eg above a Combined z-score of +2) achieves an Employability of 95%, whereas if the normal distribution was to believed, they might expect 98% of the class to recommend them.

Example calculations of Employability from Combined z-scores

Combined z-scores, $z_{R_S+PAS_S}$ $(z_{R_S}+z_{PAS_S})$ / 2	-3	-1.5	-1	-0.5	0	0.5	1	1.5	2	3
$GAUSS(z_{R_S+PAS_S})$	-0.50	-0.43	-0.34	-0.19	0	0.19	0.34	0.43	0.48	0.50
Standardised Peer Assessed Score, SPAS $\mu_T + \lambda_\sigma \sigma_T \; z_{R_S+PAS_S}$	-22	14	26	38	50	62	74	86	98	122
Standardised Peer Assessed Score, SPAS (Trimmed to 0 to 100)	0	14	26	38	50	62	74	86	98	100
Proportion of class below Combined z-score $0.5 + GAUSS(z_{R_S+PAS_S})$	0.1%	7%	16%	31%	50%	69%	84%	93%	98%	99.9 %
Employability	5	10	20	30	50	70	80	90	95	95



Quick links and related information

FAQ: How is Standard Peer Assessed Score (SPAS) calculated?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: How is the Index of Realistic Self Assessment (IRSA) calculated?

Having a good sense of who you are enables you to build upon your strengths and correct your weaknesses. In turn, that can make you more successful at work and in your personal life. You are able to better understand, predict and cope with others more effectively. You can better distinguish valid and invalid informal and formal feedback from others. You are more likely to select (and achieve!) realistic personal goals. ('ERSI: Exceptionally Realistic Self-Image', 2012)

The Index of Realistic Self Assessment (IRSA) is an early step in providing data upon which to develop an Exceptionally Realistic Self-Image (ERSI).

Mathematical definition of the Index of Realistic Self Assessment

The Index of Realistic Self Assessment (IRSA) is a ratio-based measure of the extent to which a team members' SELF assessment is matched by the assessment of the OTHER members of your team.

$$IRSA = 100 \times PAScore_{others} \div PAScore_{self}$$

Where

$PAScore_{others}$ = the Peer Assessed Score assigned that student by their team members

$PAScore_{self}$ = the Peer Assessed Score a student has assessed themself

IRSA typically lies in the range 50 to 120. However, theoretically, IRSA could lie between zero and infinity. IRSA values generally calculate as:

- **Typical:** A score between 75 and 95 is typical of about 2/3 of team members in a class.
- **Overconfident:** About ⅙ of team members achieve an index of below 75.
- **Underconfident:** About ⅙ of team members achieve an index of above 95.

Example calculations of the Index of Realistic Self Assessment

The data for the following table is drawn from

FAQ: How is the Peer Assessed (PA) Score calculated?

Calculations of the Index of Realistic Self Assessment for four team members

	ASSESSEE			
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**
Bridget	87	62.5	75	72.5
Julian	87.5	93	87.5	82.5
Lydia	75	82.5	78	80
Nigella	0	77.5	82.5	82
Peer Assessed Score (others)	54	74	82	78
Peer Assessed Score (self)	87	93	78	82
Index of Realistic Self Assessment	62	80	105	95
Indication	Overconfident	Typical	Underconfident	Typical (Borderline underconfident)

Lydia has been assessed by others with a PA Score of 82. Her self-assessment has produced her $PAScore_{self}$ of 78. Therefore, since

$$
\begin{aligned}
IRSA &= 100 \times PAScore_{others} \div PAScore_{self} \\
IRSA_{Lydia} &= 100 \times 82 \div 78 \\
&= 105
\end{aligned}
$$

Lydia's IRSA of 105 indicates that she is an outlier when compared with most team members in a typical class. Specifically, she is underconfident in terms of assessing her strengths when compared with how others perceive her.

Why an IRSA of 100 is not a perfect score!

From our experience using Peer Assess Pro in many classes, we find most team members overrate themself when compared with how their team members rate them. This overrating results in a self-assessed Peer Assessed Score typically 7 to 10 points higher than the Peer Assessed Score awarded by the other members of that same team. This phenomenon of overrating of one's self assessment is well-established in the literature, termed **self-enhancement bias** (See, for instance, (Loughnan et al., 2011). Informally, self-enhancement bias is also known as the **Lake Wobegon Effect**, a phenomenon observed in a fictional town "where all the women are strong, all the men are good looking, and all the children are above average." ('Lake Wobegon effect', n.d.; 'Lake Wobegon: The Lake Wobegon Effect', 2017).

Quick links and related information

FAQ: How do I interpret measures of realistic self-assessment?

Lake Wobegon effect. (n.d.). Retrieved 25 July 2017, from http://psychology.wikia.com/wiki/Lake_Wobegon_effect

Lake Wobegon: The Lake Wobegon Effect. (2017). In *Wikipedia*. Retrieved from https://en.wikipedia.org/w/index.php?title=Lake_Wobegon&oldid=787029148#The_Lake_Wobegon_effect

Loughnan, S., Kuppens, P., Allik, J., Balazs, K., de Lemus, S., Dumont, K., ... Haslam, N. (2011). Economic Inequality Is Linked to Biased Self-Perception. *Psychological Science*, *22*(10), 1254–1258. https://doi.org/10.1177/0956797611417003

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Interpreting the Index of Realistic Self Assessment (IRSA)

The usual tendency of team members is to apply a self-enhancement bias when rating themselves using Peer Assess Pro. Consequently, we can interpret Index of Realistic Self Assessment (IRSA) scores in one of three ways: typical team members, overestimated, and underestimated.

Typical IRSA

An IRSA score between 75 and 95 suggests the assessed team member understand realistically their team contribution when contrasted with the assessment perceived by other team members. A score between 75 and 95 is typical of about 2/3 of team members in a class.

Overconfident IRSA

An IRSA below 75 suggests the assessed team member OVERESTIMATES their team contribution when perceived by other team members. An index below 75 suggests the team member undertake action to understand proactively their areas

for development by informally soliciting further feedback and guidance from their team members. About ⅙ of team members achieve an index of below 75.

Underconfident IRSA

An IRSA above 95 suggests the assessed team member has a tendency to UNDERESTIMATE their team contribution when contrasted with the assessment perceived by other team members. The team member should consider developing more confidence in applying and displaying their strengths. About ⅙ of team members achieve an index of above 95.

Developing an exceptionally realistic self image, ERSA

An Index of Realistic Self Assessment that is not in the 'typical' range of 75 to 95 suggests that the team member take active steps to

- More accurately identify their strengths and areas for development, and
- Develop an appropriate professional development plan focussed on developing an Exceptionally Realistic Self image (ERSA)

What are the benefits of having an Exceptionally Realistic Self-Image?

- Having a good sense of who you are enables you to build upon your strengths and correct your weaknesses. In turn, that can make you more successful at work and in your personal life.
- You are able to better understand, predict and cope with others more effectively.
- You can better distinguish valid and invalid inputs.
- You are more likely to select (and achieve!) realistic personal goals. ('ERSI: Exceptionally Realistic Self-Image', 2012)

What can get in the way of having an Exceptionally Realistic Self-Image?

- The way you were brought up – the inaccurate comments (good or bad) you heard from family and friends and internalized.
- The messages you send yourself through negative self-talk. ("No wonder I didn't get that job – I always mess up in job interviews!")

- The way you perceive yourself. ("Why doesn't my supervisor do it my way? I'm so much smarter than she is!") ('ERSI: Exceptionally Realistic Self-Image', 2012)

How do I develop my Exceptionally Realistic Self-Image, ERSI?

A three-step programme to develop an Exceptionally Realistic Self-Image includes

- **Make a commitment:** Decide you really want to know yourself better and that you are willing to pay the price (in time, effort, or temporary unease) that may be required.
- **Learn to recognize and to reduce your defenses** against the cues from reality. In others words to see yourself as you really are.
- **Receive and review those cues** to assess how your current self-image and your authentic self may be incongruent or inconsistent ('ERSI: Exceptionally Realistic Self-Image', 2012)

Quick links and related information

FAQ: How is the Index of Realistic Self Assessment (IRSA) calculated?

ERSI: Exceptionally Realistic Self-Image. (2012). Orange County Human Resource Services Portal. Retrieved from http://bos.ocgov.com/hr/hrportal/docs/docs_hr_leadership_forum/minutes_2012/minutes_030812/ersi.doc

Lake Wobegon effect. (n.d.). Retrieved 25 July 2017, from http://psychology.wikia.com/wiki/Lake_Wobegon_effect

Lake Wobegon: The Lake Wobegon Effect. (2017). In *Wikipedia*. Retrieved from https://en.wikipedia.org/w/index.php?title=Lake_Wobegon&oldid=787029148#The_Lake_Wobegon_effect

Loughnan, S., Kuppens, P., Allik, J., Balazs, K., de Lemus, S., Dumont, K., ... Haslam, N. (2011). Economic Inequality Is Linked to Biased Self-Perception. *Psychological Science*, *22*(10), 1254–1258. https://doi.org/10.1177/0956797611417003

FAQ: How is an outlier peer assessment rating identified?

If one member of a team submits a peer assessment for an assessee 'vastly different' than the assessments given by the other team members, then this gives rise to an Active Warning in Peer Assess Pro titled

> A team member has assessed another team member very differently than the other team members. (WC0010)

Specifically, a warning will be raised if the impact on the assessee's Peer Assessed Score is **raised or lowered by more than 8 PA units** beyond the average rating given by **the other members** of the team.

Consider the following table of Peer Assessed SubScores. Note in particular how the ratings by **Assessor Nigella** of **Assessee Bridget** shows a Peer Assessed SubScore of zero. In contrast, Julian and Lydia rated Bridget much higher: 87.5 and 75 respectively. Similarly, **Assessor Julian** has assessed **Assessee Julian** a little lower (62.5) than the ratings by team members Lydia (82.5) and Nigella (77.5). Nigella's rating of Bridget would raise the foregoing Active Warning, whereas Julian's rating of Nigella would NOT result in a warning.

Calculation of Peer Assessed SubScores for a team of four members

	ASSESSEE			
ASSESSOR	**Bridget**	**Julian**	**Lydia**	**Nigella**
Bridget	-	62.5	75	72.5
Julian	87.5	-	87.5	82.5
Lydia	75	82.5	-	80
Nigella	0	77.5	82.5	-
Peer Assessed Score	54.2	74.2	81.7	78.3

Source data: FAQ: How is the Peer Assessed (PA) Score calculated?

The case of Assessor Nigella rating Bridget: outlier warning generated

The case of **Nigella assessing Bridget** will result in the following elaboration of the ACTIVE WARNING being generated:

> **Nigella** rated team member **Bridget** PARSIMONIOUSLY awarding PA Score = 0. Other team members rated 81 (Exclusive). Net resulting PA Score = 54, **a LOSS of 27**. Team Kubla.

This warning means that if Nigella's low PA Score rating of zero had been **excluded** from calculating Bridget's PA Score, then Bridget would have received a PA Score of 81 from the other team members Julian (87.5)and Lydia (75). 81 is the mean of 87.5 and 75 as drawn from the previous table. When Nigella's parsimonious rating of zero is included, then Bridget's PA Score drops from 81 to 54.2, a loss of 27 points when calculating the whole team's PA Score for Bridget. Rated by all three team members, Bridget's Peer Assessed Score is 54.2, (87.5 + 75 + 0)/3, as explained in the examples in:

> FAQ: How is the Peer Assessed (PA) Score calculated?

Nigella's outlier rating of Bridget is a symptom of a potentially serious dysfunction in the team's processes. Consequently, because the LOSS of 27 PA units caused by Nigella's rating is greater than the threshold of 8 units, then the elaborated warning message above is presented.

The case of Assessor Bridget rating Julian: outlier warning generated

Would Peer Assess Pro generate this outlier warning for the case of the subscore assessments of Bridget assessing Julian?

> **Bridget** rated team member **Julian** PARSIMONIOUSLY awarding PA Score = 62.5. Other team members rated 80 (Exclusive). Net resulting PA Score = 80, a LOSS of 17.5. Team Kubla.

Because the loss of 17.5 is greater than 8, then yes, the elaborated warning would be presented.

The case of Assessor Julian rating Nigella: outlier warning NOT generated

Would Peer Assess Pro generate this outlier warning for the case of the subscore assessments of Julian rating Nigella?

> **Julian** rated team member **Nigella** GENEROUSLY awarding PA Score = 82.5. Other team members rated 76.5 (Exclusive). Net resulting PA Score = 78.3, a GAIN of 4.2. Team Kubla.

Because the GAIN of 4.2 is less than 8, then NO, the elaborated warning would NOT be presented.

Interpreting outlier warnings

It could be the case the Nigella's rating of Bridget (PA SubScore = 0) is a fair and true representation for the team situation, whilst Julian and Lydia conspired to over-rate Bridget. Consequently, Peer Assess Pro shows the following two WARNINGS. These warnings show the GAIN in PA Score that Julian and Lydia have given Bridget, when their own rating alone is excluded from the rating given by the other team members. The warning seems a bit 'weird' on account of the extreme rating by Nigella that is such an outlier.

The teacher should take such a warning as inspiration to conduct a forensic interrogation of the team members to determine the truth of the situation!

> Team Kubla. **Julian** rated team member **Bridget** OVERGENEROUSLY giving PA Score = 88. Other team members [Nigella and Lydia] rated 38 (Exclusive). Net resulting PA Score = 54, a GAIN of 17.

> Team Kubla. **Lydia** rated team member **Bridget** GNOME 2 OVERGENEROUSLY giving PA Score = 75. Other team members [Nigella and Julian] rated 44 (Exclusive). Net resulting PA Score = 54, a GAIN of 10.

Threshold for warning of outlier peer assessment

The threshold for raising a Warning in Peer Assess Pro is +/- 8 PA Score units. That is, if one assessor's rating would affect the PA Score awarded to an assessee by more than 8 units, then the Outlier Warning will be flagged. In the previous example, the Rating by Nigella affected the rating of Bridget by 27 units. In

contrast the rating by Julian of Nigella had an impact of 4.2, which is less than threshold of 8 units, so no warning would be generated.

The data used in this example is drawn from the FAQ below.

Quick links and related information

FAQ: How is the Peer Assessed (PA) Score calculated?

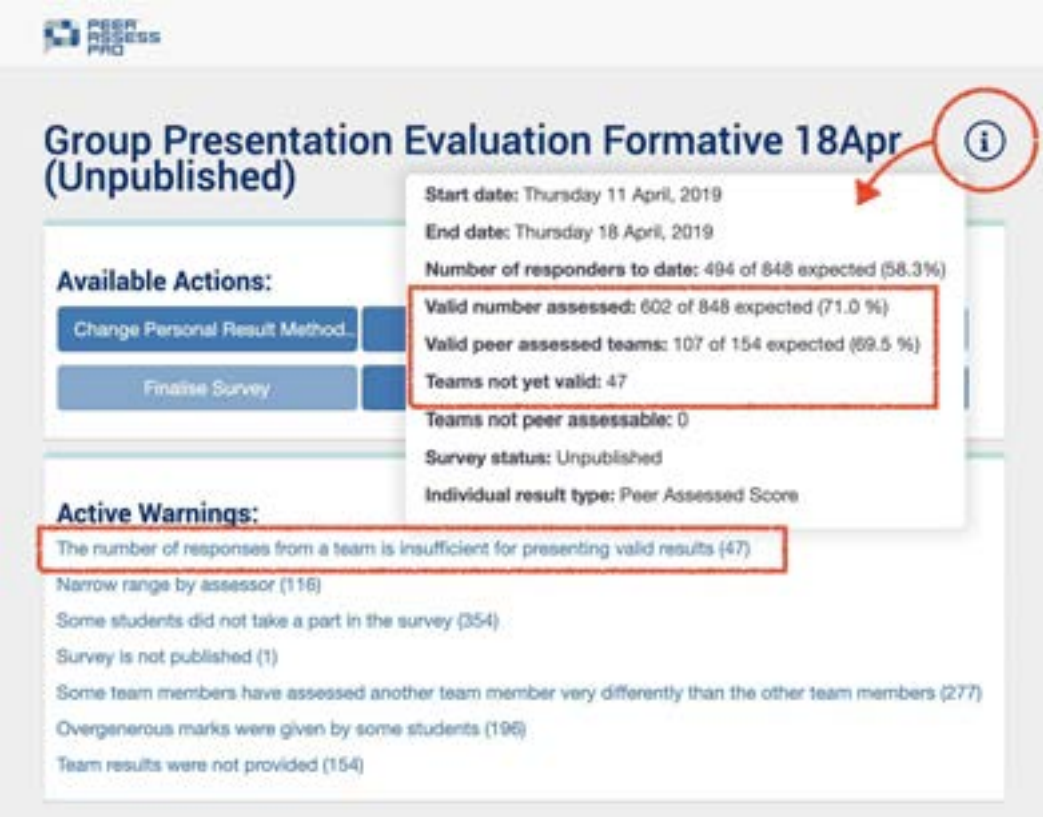
FAQ: What is a valid assessed team?

Peer Assess Pro restricts the display of results to **valid assessed teams**. The notion of a valid assessed team is to prevent the display of results to students (and facilitators) when a small number of peer assessments from a team has been submitted. Such a low response situation could distort the reliability and accuracy of both the team's peer assessment and personal result calculations, and ACTIVE WARNING messages for a team. Consequently, class statistics such as mean, maximum, range, and standard deviation are calculated only for team members that are designated as part of a valid assessed team.

Students can only view results if they belong to a valid assessed team. A facilitator will only view results from valid assessed teams.

How many valid and invalid teams do I have?

The Teacher's Dashboard **Active Warnings** and **(i) Information** button inform you of the number of valid teams and valid assessments throughout the progress of managing the peer assessment responses. The Active Warning enables you to 'hunt down' the teams that have not yet achieved valid status.



Mathematical definition

For teams with five or fewer members, a valid assessed team must have peer ratings from at least three members of the team. For teams with six or more team members 'just over' half the team members must peer assess. The required minimum number of team members k_{min} who must rate within a particular team of size n members is defined as:

$$k_{min} = MAX(3, INT(n/2 + 1))$$

Where

k_{min}= the minimum number of team members required to rate within a particular team

MAX is a function that selects the maximum of the calculated values

INT is a function that calculates the integer value of the result

For teams of size 0, 1 and 2 peer assessment results are not calculated. The default Personal Pesult in these circumstances is the Team Result.

Example calculations

Team size, n	Required minimum assessors, k_{min}	Proportion of whole team
3	3	100%
4	3	75%
5	3	60%
6	4	66%
7	4	57%
8	5	62%
9	5	56%
10	6	60%

Quick links and related information

FAQ: How is the Peer Assessed (PA) Score calculated?

FAQ: How are peer assessment and personal results calculated and defined mathematically?

FAQ: What is the content of emails sent by Peer Assess Pro?

Table listed by Email ID, Short descriptor, and Email SUBJECT line

Priority Email ID: Short Descriptor Subject
CATASTROPHIC 1: Request to CORRECT TEAM membership CRITICAL! Please correct team membership for peer assessment due by << Due Date >>. <<Activity Title>>. Alert from team member << team member>>
CRITICAL 11: Request to COMPLETE peer assessment Please complete peer assessment due by << Due Date >>. <<Activity Title>>
CRITICAL 12: REMINDER to complete peer assessment REMINDER! Please complete peer assessment due by << Due Date >>. <<Activity Title>>
CRITICAL 13: Request to RESUBMIT peer assessment RESUBMIT! Please complete peer assessment due by << Due Date >>. <<Activity Title>>
CRITICAL 20: ABANDONED Peer Assessment activity. ABANDONED peer assessment for peer assessment due by << Due Date >>. <<Activity Title>>
WARNING 101: Request to RECONSIDER peer assessment Request to reconsider peer assessment due by << Due Date >>. <<Activity Title>>
ADVISORY 1001: Personal results PUBLISHED and available to view Please view your personal results for peer assessment due by << Due Date >>. <<Activity Title>>
ADVISORY 1002: REVISED personal results published and available to view REVISED RESULTS! Please view your personal results for peer assessment due by << Due Date >>. <<Activity Title>>
ADVISORY 1003: FINALISED personal results published and available to view FINALISED RESULTS! Please view your personal results for peer assessment <<Activity Title>>. Available until << finalisation date + 2 weeks >>
ADVISORY 1004: Personal results PUBLISHED but NOT available to view Incomplete submissions from your team for peer assessment due by << Due Date >>. <<Activity Title>>
ADVISORY 1005: FINALISED personal results published but NOT available to view FINALISED RESULTS: Incomplete submissions from your team for peer assessment due by << Due Date >>. <<Activity Title>>

Table of email body text, listed by Short descriptor, Email ID, Email SUBJECT line

Short Descriptor (Priority Email ID) Subject Detail
Request to CORRECT TEAM membership (CATASTROPHIC 1) CRITICAL! Please correct team membership for peer assessment due by << Due Date >>. <<Activity Title>>. Alert from team member << team member>> Dear << Teacher Fullname >>, The team member << team member>> identified as a team member in team << Team >> has noted that there is an error in the composition of their team. You may view the current membership of teams for your activity as follows: - Select the Activities tab from the Xorro Teachers dashboard - Select Running Activities under the Activities menu - Select the peer assessment activity <<Activity Title>> - Select the Team Composition button for the Activity <<Activity Title>> - Note the Re-import CSV button, to which we'll refer later. Please carry out these corrective actions to update the teamset for this activity - Consult with the team member to identify the correct membership of teams for this activity. - Correct the original Group .csv file that was used to to create the Group currently attached to the peer assessment activity << Activity Title>>. Either add, delete or swap team members as required in the 'team' column of the Group CSV file. - Select the Re-import CSV button found in the Team Composition section for the Running Activity <<Activity Title>>. See previous section for viewing Team Composition. - Follow the instructions to update the Teamset for this activity - If the re-imported CSV is successful, you will observe that the adjusted teams are coloured orange in the Team Compositions. Check that the revised teams are as you expected. - If there is no change to the teams listed, then there are errors in your uploaded CSV. eg you have mismatched the Group name, missing or duplicate email, other. Upon a succesful re-import of the revised Teamset, Xorro Peer Assess Pro will proceed automatically to: - Remove the existing peer assessment submissions from the analysis for ALL members of the affected team(s) - Send an email to the affected team members requesting them to resubmit their responses. Notes: Submissions from team members whose team membership is unchanged will NOT be affected. Do not use the Participants tab to adjust the team membership of a running activity. Any changes you make will NOT be transferred into an existing running activity. Kind regards, Peer Assess Pro

Request to COMPLETE peer assessment (CRITICAL 11)

Please complete peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

Please complete the Peer Assess Pro peer assessment activity for your team before << Due Time>> << Due Date >>.

To complete the activity, please visit the Activity URL << Activity Specific URL>>.

Alternatively, you may visit the activity at your Participant URL << Participant URL >>. Then select the activity <<Activity Title>> when it becomes available after the start date.

Start Date: The URLs will become available for your responses from << Activity Start Time>> << Activity Start Date >>.

For further information about preparing for, and using the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Teacher fullname >>

REMINDER to complete peer assessment (CRITICAL 12)

REMINDER! Please complete peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

The peer assessment activity for << Activity Title>> will soon become unavailable for you to complete. Therefore, please complete the Peer Assess Pro peer assessment activity for your team before << Due Time>> << Due Date >>.

To complete the activity, please visit the Activity URL << Activity Specific URL>>.

Alternatively, you may visit the activity at your Participant URL << Participant URL >>. Then select the activity <<Activity Title>> when it becomes available after the start date.

Start Date: The URLs became available for your responses from << Activity Start Time>> << Activity Start Date >>.

For further information about preparing for, and using the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Facilitator fullname >>

Request to RESUBMIT peer assessment (CRITICAL 13)

RESUBMIT! Please complete peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

You may have already completed the Peer Assess Pro peer assessment for <<Activity Title>> due before << Due Time>> << Due Date >>.

I regret to advise that I require you to resubmit your survey. You response submitted to date has been deleted from the analysis. The reasons for this request may be due to a change to the membership of your team, such as a deletion or addition of a team member.

To complete the activity, please visit the Activity URL << Activity Specific URL>>.

Alternatively, you may visit the activity at your Participant URL << Participant URL >>. Then select the activity <<Activity Title>>.

Please resubmit your peer assessment for <<Activity Title>> due before << Due Time>> << Due Date >>.

We apologise for your inconvenience.

For further information about preparing for, and using the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Teacher fullname >>

ABANDONED Peer Assessment activity. (CRITICAL 20)

ABANDONED peer assessment for peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

You and your team members were invited to participate recently in the peer assessment for << Activity Title>> due << Due Date >>.

The Teacher ABANDONED the activity on << Abandoned Date >> due to exceptional circumstances. Please disregard any previous interim published results.

I apologise for your inconvenience.

Kind regards,

<< Teacher fullname >>

Request to RECONSIDER peer assessment (WARNING 101)

Request to reconsider peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

You recently completed the peer assessment of << Activity Title>>. However your Teacher noted that your responses were significantly different when compared with other respondents. Specifically, you may have:

- Rated all team members the same, or over a narrow range
- Rated a team member significantly overgenerously or undergenerously, when compared with other members of your team
- Provided unhelpful, unconstructive or inconsiderate qualitative comments in your feedback to one or more team members.

If you feel that your ratings and feedback are entirely justified, you need take no further action.

Alternatively, if you wish to review and resubmit a more accurate survey, please use the URLs below to submit a replacement peer assessment survey. Please take special care to provide useful and accurate qualitative feedback that will help your team member(s) and Teacher understand the ratings you have provided.

Complete the revised Peer Assess Pro peer assessment activity for your team before << Due Time>> << Due Date >>.

To complete the activity, please visit the Activity URL << Activity Specific URL>>.

Alternatively, you may visit the activity at your Participant URL << Participant URL >>. Then select the activity <<Activity Title>> .

For further information about preparing for, and using the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Teacher fullname >>

Personal results PUBLISHED and available to view (ADVISORY 1001)

Please view your personal results for peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

You recently completed the peer assessment of << Activity Title>>. You may now view your Personal Result and feedback. Please visit the Activity URL << Activity Specific URL>>.

Your results will be available for you to view for a period of two weeks following the finalisation of the activity. However, if you hold a Xorro Plus Account, then you can view all your Peer Assessment and other Xorro Test Activities whilst your a subscriber.

If you have specific questions or concerns about your Personal Results please contact me promptly so that I can determine a remedy.

For further information about learning from the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Teacher fullname >>

REVISED personal results published and available to view (ADVISORY 1002)

REVISED RESULTS! Please view your personal results for peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

You recently completed the peer assessment of << Activity Title>>. You may now view your revised Personal Result and feedback. Please visit the Activity URL << Activity Specific URL>>.

Your results may have been revised from those previously made available to you. Reasons for revisions include:

- A change in Team Results
- Late peer assessment responses
- An adjustment to the method the teacher has used to calculate your personal result.

Your results will be available for you to view for a period of two weeks following the finalisation of the activity. However, if you hold a Xorro Plus Account, then you can view all your Peer Assessment and other Xorro Test Activities whilst you are a subscriber.

If you have specific questions or concerns about your Personal Results please contact me promptly so that I can determine a remedy.

For further information about learning from the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Teacher fullname >>

FINALISED personal results published and available to view (ADVISORY 1003)

FINALISED RESULTS! Please view your personal results for peer assessment <<Activity Title>>. Available until << finalisation date + 2 weeks >>

Dear <<team member>>,

You recently completed the peer assessment of << Activity Title>>. You may now view your final Personal Result and feedback. Please visit the Activity URL << Activity Specific URL>>.

Your results are available for you to view for a period of two weeks following the finalisation of the activity. That is, from now until << Finalisation date + two weeks >>. However, if you hold a Xorro Plus Account, then you can view all your Peer Assessment and other Xorro Test Activities whilst your a subscriber.

Your results may have been revised from those previously made available to you. The revisions may have been due to:

- A change in Team Results
- Late peer assessment responses
- An adjustment to the method the teacher has used to calculate your personal result.

If you have specific questions or concerns about your Personal Results please contact me promptly so that I can determine a remedy.

For further information about learning from the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Teacher fullname >>

Personal results PUBLISHED but NOT available to view (ADVISORY 1004)

Incomplete submissions from your team for peer assessment due by << Due Date >>. <<Activity Title>>

Dear <<team member>>,

You recently completed the peer assessment << Activity Title>>. However, several team members have yet to complete their peer assessment. Consequently, you are restricted from viewing the results of the peer assessment as the results would be incomplete.

Once the remainder of your team have completed their peer assessments, you will be able to view your final Personal Result and feedback. Please visit the Activity URL << Activity Specific URL>>.

If you have specific questions or concerns about your Personal Results please contact me promptly so that I can determine a remedy.

For further information about learning from the results of the peer assessment, please visit http://peerassesspro.com.

Kind regards,

<< Teacher fullname >>

FINALISED personal results published but NOT available to view (ADVISORY 1005) FINALISED RESULTS: Incomplete submissions from your team for peer assessment due by << Due Date >>. <<Activity Title>> Dear <<team member>>, You and your team members were invited to participate recently in the peer assessment for << Activity Title>> due << Due Date >>. The Teacher finalised the results on << Finalisation Date >>. However, an insufficient number of team members failed to complete their peer assessment. Consequently, you are restricted from viewing the results of the peer assessment as the results would be incomplete. Since the activity has been finalised, there is now no option for further peer assessments to be submitted from your team. Kind regards, < Teacher fullname >>

CONTACT US

Please do not hesitate to ask us for help.

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We especially welcome your advice on how the app and Reference Guide could be improved. We'd also like to know which features you expect to value highly in your teaching and use of Xorro Peer Assess Pro™.

Thank you for your participation.

Frequently Asked Questions

FAQs on the web at https://www.peerassesspro.com/frequently-asked-questions-2/

Quickstart Guide for Peer Assess Pro

https://www.peerassesspro.com/quickstart-guide-for-teachers/

Home/Table of Contents for Reference Manual

http://tinyurl.com/papRefWeb2

Website

https://www.peerassesspro.com/

Quick links and related information

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