
Student Group Projects: Challenges and Risks

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Group projects

- When you work with others in a team during a group project, you would like your project to run smoothly



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- with the best possible outcomes.



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Group projects

- Unfortunately, many things can go wrong and this means the success of your project is compromised.



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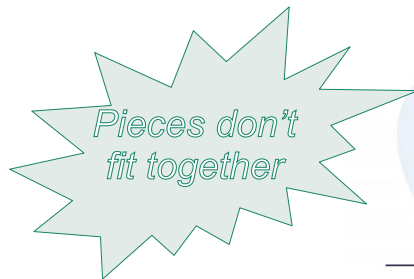
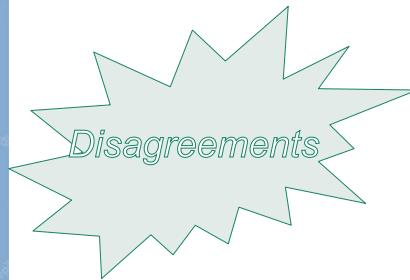


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Group projects

- The good news is that most of the common problems can be managed to reduce the negative impact on your project.
- If you know the details of the challenging situation, you can **plan** at the start of the project
 - *Example: if some team members are in a different country, you can decide up-front how and when you will communicate.*
- If you identify something that **might** go wrong, you can accept it as a **risk** and **plan** how you might **mitigate** for it
 - *Example: if you have a concern about a student lacking commitment, you might specify how you will recognise this and define an escalation strategy.*

Planning and issues

- If you do not make specific plans at the start of your project, it is more likely that you will experience **issues**. Some examples are:
 - ➔ you spend a lot of time trying to contact one another to organise things
 - ➔ you are confused about who is doing what and waste time doubling up or missing things out
 - ➔ you struggle to solve interface problems when you try to combine tasks from different team members
 - ➔ your team doesn't work well together because of personality conflicts or differences in opinion.

Project and risk planning

- **Challenges** are situations you *know* about in advance. You address these by making *project plans* at the start of your project.
- **Risks** are *uncertain* events / conditions that *might* happen and could affect your project. You can minimise the negative effects by *risk planning*.
- **Risk mitigation** helps you reduce the negative effects on your project. You *identify* the risks, create an *action* plan to address these and *monitor* to ensure the plan is being carried out.
- **Risk planning** involves managing the risks that are most *likely* to occur and/or that will *impact* your project the most.

Project and risk planning

- Below are some of the situations that students commonly experience. For each, decide whether whether you know this at the start of the project (**challenge**) or whether it is a **risk**.

Situation
1. A team member does not engage or contribute enough
2. Team has different backgrounds or experience
3. Team members are in different time zones
4. Communication between team members breaks down
5. Merge issues when committing code to the repository
6. Team member has a planned holiday
7. Lost code due to computer malfunction

Project and risk planning

- Below are some of the situations that students commonly experience. For each, decide whether whether you know this at the start of the project (**challenge**) or whether it is a **risk**.

Situation	
1. A team member does not engage or contribute enough	Risk
2. Team has different backgrounds or experience	Challenge
3. Team members are in different time zones	Challenge
4. Communication between team members breaks down	Risk
5. Merge issues when committing code to the repository	Risk
6. Team member has a planned holiday	Challenge
7. Lost code due to computer malfunction	Risk

Risk framework

- Research indicates that the project areas most likely to create risks for student projects are:
 - **Student contribution**
 - **Team self-management**
 - **Resources**
 - **Stakeholder (teaching staff or client) contribution**

Risk framework

● Student contribution

- *Engagement* How committed the student is to a project, for example, their level of interest or motivation.
- *Expertise* The student's ability to execute tasks, for example their knowledge, experience and familiarity with technologies.
- *Personality* Attributes that contribute to team dysfunction or ineffective project participation, for example, too shy to speak in meetings, overly assertive, resistant to complying with team decisions.
- *Availability* Degree to which a student is available to the project as a result of external factors, for example, other commitments, time differences.
- *Wellbeing* Student health issues that affect their ability to contribute.

Risk framework

● Team self-management

- ➔ *Communication* How well the team members communicate with each other. Examples are confusion about how to communicate and not informing team members when struggling with a task.
- ➔ *Co-ordination* Success in co-ordinating project tasks, for example, planning tasks and meeting times and merging code modules.
- ➔ *Co-operation* How well students work with each other, for example, ability to see the other's point of view, make compromises.
- ➔ *Process* Success of execution of tasks, for example, uneven distribution of workload, late delivery of tasks.
- ➔ *Clarity* Degree to which students are clear about project expectations, requirements, tasks and the role of the teaching staff.

Risk framework

● Resources

- *Hardware* Failure of, or not having access to, needed equipment, for example, computers, USB sticks, network connections.
- *Software* Difficulties with, or not having access to, required data or third party libraries.
- *Technology* Technology challenges, for example, technology changing too fast.

Risk framework

● Stakeholder (teaching staff, client) contribution

- *Engagement* Willingness to commit to the project, for example, interest or motivation.
Expectations Teaching staff or client expectations of the project, for example, clients changing requirements or expecting few meetings and teaching staff setting difficult delivery dates.
- *Expertise* Capability with respect to the software being developed, for example, application area knowledge, familiarity with technologies.
- *Availability* Degree to which a stakeholder is available to the project as a result of external factors, for example, other commitments, time differences.

Risk mitigation

- Many things can go wrong in a project and you cannot address all of them.
- Focus on a small number of risks that are most likely to affect project outcomes, based on
 - how **likely** it is that the risk event or condition will occur
 - how much **impact** it will have on project outcomes, should it occur.
- For each, decide what you will do and who will do it (**plan**), who will keep track of the situation (**monitor**) and what you will do if the risk becomes an issue you cannot manage (**escalate**).
- *Remember that having a mitigation plan in place won't prevent the event / condition from occurring. The goal is to reduce how much your project will be negatively affected.*

Risk mitigation

- Your mitigation strategy should be:
 - ➔ *Specific and verifiable* Saying you will 'meet regularly' is unhelpful because no-one knows what 'regularly' means and you will waste a lot of time arranging meetings. If possible, agree up-front on a meeting time, place and communication mechanism. If not, be specific about when you will decide and who will organise it.
 - ➔ *Assigned* Saying 'we will arrange a meeting' is ineffective unless the person who will do the arranging is stated. Always assign responsibility for an action to a team member.
 - ➔ *Appropriate* The strategy 'discuss strengths and weaknesses up-front' is a great idea but does not fully address the risk event 'team member struggling with task'. Ensure your strategy directly addresses the stated risk and is complete.
 - ➔ *Realistic* Addressing code conflict problems in Git by requiring the team lead to be present at all commits is likely to cause delays when they are not available when needed. Strategies that are difficult to put into practice are unhelpful. Ensure the strategy is feasible and team members agree to follow it.

Planning strategies

- Case study: *Meetings difficult as students have different university and work schedules.*

Suggested approach	Comment
Meet Tuesdays and Thursdays at 5p.m., via zoom. Project manager will set up zoom meeting.	
Plan meetings a few days in advance.	
Use Slack as main point of contact.	
Create a spreadsheet with team members' availability.	
Team members to inform others in advance if they can't attend a meeting.	

Planning strategies

- Case study: *Meetings difficult as students have different university and work schedules.*

Suggested approach	Comment
Meet Tuesdays and Thursdays at 5p.m., via zoom. Project manager will set up zoom meeting.	The team has presumably discussed everyone's schedules and planned accordingly. The plan is specific , realistic , verifiable and appropriate . Responsibility is assigned .
Plan meetings a few days in advance.	No person assigned to make sure this happens . Not specific . Introduces an unnecessary overhead – someone will need to run around contacting people and trying to find a suitable time (not realistic).
Use Slack as main point of contact.	Doesn't address the problem of finding suitable meeting times (not appropriate). Who will set up the Slack channel (no-one assigned).
Create a spreadsheet with team members' availability.	Who will create the spreadsheet (not assigned)? How will you share it (not specific)? What will you do then (not fully appropriate)?
Team members to inform others in advance if they can't attend a meeting.	Doesn't address the scheduling problem (not appropriate).

Planning strategies

- Case study: *Team member struggling with task.*

Suggested approach	Comment
Team member to alert the team on the Slack channel and the team will try to solve together. If further assistance is required, Elsie will immediately book a next available session with a tutor through #appointment-bookings channel.	
Regular team meetings to discuss challenges.	
Project manager allocates tasks with agreement of all.	
Establish lines of communication for students to ask for help.	
Student to book session with teaching staff.	

Planning strategies

● Case study: *Team member struggling with task.*

Suggested approach	Comment
Team member to alert the team on the Slack channel and the team will try to solve together. If further assistance is required, Elsie will immediately book a next available session with a tutor through #appointment-bookings channel.	The team has a plan in place, what will happen if the problem occurs and who is responsible. The strategy is specific , realistic , verifiable and appropriate . Responsibility is assigned .
Regular team meetings to discuss challenges.	How regular? When? What will you do if someone is having problems (not specific)? How will you ensure the student lets you know (they may be too shy / under-confident).
Project manager allocates tasks with agreement of all.	This might help with avoiding the problem but doesn't address the risk, as stated (not appropriate).
Establish lines of communication for students to ask for help.	What are the lines of communication (not specific) and who will do the establishing (no-one assigned). This is part of a solution but doesn't fully address the stated risk (not appropriate)?
Student to book session with teaching staff.	When - do you mean as soon as they have a problem (not specific)? Are there other strategies to try first that might be of more benefit to the student and the team?

Issue management

- Despite your best efforts, it is likely that you will experience some **issues**. These may arise when:



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an unexpected, external event occurs that is outside your control

you find that one of your strategies is not working as expected



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a situation or event occurs that you did not plan for



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Issue management

- Remember to include in your up-front planning what you will do in the event of an issue arising. You should consider:
 - ➔ if what you have learned represents a new opportunity
 - ➔ how you might replan with a new strategy
 - ➔ whether your only option is to escalate.

Summary

- Planning up front is likely to reduce the number and impact of issues experienced by your project.
- Your project is unique. You should identify and monitor the challenges and risks that apply for **your project**.
- Strategies should be **specific and verifiable, assigned, appropriate and realistic**.

Questions?