Erasmus
School of
Economics

How to design a group project for your course that helps to reduce free-riding

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Academic
Skills

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Introduction

Program

- Key concepts and your group project(s)
- Designing a GP that reduces FR (card game)
  - Team creation
  - Learning activity A: the group project characteristics (jigsaw)
  - Learning activity B: your ideal group project (think)
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- Possibilities to reduce FR (educational literature)
- Questions?

Key concepts and your group project(s)

- Free-riding (FR) = "A behavior pattern wherein an individual working in a group setting fails to contribute his or her fair share to a group effort as perceived by group members"
(Aggarwal & O'Brien, 2008, p. 256)

- Group project (GP) = "A [number of] graded assignment[s] requiring students to work collaboratively across multiple class periods and involving some time outside the normal class meeting"
(Ettington & Camp, 2002, p. 357)

Questions:
- Do you use a GP in your course(s)?
- Why have you chosen to use a GP?
- What is your experience with FR?

Designing a GP that reduces FR (card game)

Team size	Team formation approach	# peer process evaluations	Type of grade	Method to handle free-riding
1	**2**	**3**	**4**	**5**

Team creation

- Teams of 3 or 4 members
- Divide cards between members (each member at least 1 card)
  For example:
  - Member 1 → cards 1 and 2
  - Member 2 → cards 3 and 4
  - Member 3 → card 5
- In case of four members, member 4 gets card 4.

Learning activity A: the GP characteristics (1)

What to do?

- Read the text on your card (2 min)

- Inform your team about the GP characteristic on your card and the related levels. Try to answer the following questions (3 min pp):

  - What characteristic is on my card?

  - What are its levels?

  - Do specific levels of the characteristic better help to reduce FR?

  Note: Your team members are allowed to ask questions so that the characteristics and the levels on the card are clear for them.

Learning activity A: the GP characteristics (2)

What to do?

- Read the text on your card (2 min)

- Inform your team about the GP characteristic on your card and the related levels. Try to answer the following questions (3 min pp):

  - What characteristic is on my card?

  - What are its levels?

  - Do specific levels of the characteristic better help to reduce FR?

  Note: Your team members are allowed to ask questions so that the characteristics and the levels on the card are clear for them.
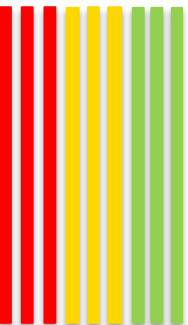
Learning activity B: your ideal GP (1)

Now, you know about several GP characteristics that may help to reduce FR.

What to do next?

- <u>Individual exercise</u>: design the group project that you would like to use for a course that you (will) teach (in the future)
- You can do this by:
  - ranking the five GP characteristics in order of importance
  - indicating which level you prefer for each characteristic
  - mentioning other important characteristics / levels to reduce FR
  - writing down how you think FR will be reduced
  - see table on the next slide (and A4 paper on your table)

Learning activity B: your ideal GP (2)

Ranking	Characteristics	Levels		
	Team size	2 students	3 students	4 students
	Team formation approach	self-selection	random assignment	schedule availability and motivation
	# peer process evaluations	0 evaluation	1 evaluation	2 evaluation
	Type of grade	common grade	divided grade	
	Method to handle free-riding	conversation with the coordinator	member expulsion	two-card system

How to reduce FR:

Possible other characteristics / levels:

Learning activity B: your ideal GP (3)

Ranking	Characteristics	Levels		
	Team size	2 students	3 students	4 students
	Team formation approach	self-selection	random assignment	schedule availability and motivation
	# peer process evaluations	0 evaluation	1 evaluation	2 evaluation
	Type of grade	common grade	divided grade	
1	Method to handle free-riding	conversation with the coordinator	member expulsion	two-card system

How to reduce FR:

Possible other characteristics / levels:

Learning activity B: your ideal GP (4)

Ranking	Characteristics	Levels		
	Team size	2 students	3 students	4 students
	Team formation approach	self-selection	random assignment	schedule availability and motivation
	# peer process evaluations	0 evaluation	1 evaluation	2 evaluation
	Type of grade	common grade	divided grade	
	Method to handle free-riding	conversation with the coordinator	member expulsion	two-card system

How to reduce FR:

Possible other characteristics / levels:

Learning activity C: your team's ideal GP (1)

What to do now?

- <u>Group exercise</u>: design the GP that you would like to use as a team for a (hypothetical) course you will teach together (in the future)

- You should do this by:
  - determining the course you design the GP for
  - ranking the five GP characteristics in order of importance
  - indicating which level your team prefers for each characteristic
  - mentioning other possible characteristics / levels to reduce FR
  - writing down how your team thinks FR will be reduced
  - See table on the next slide (and A3 paper on your table)

Learning activity C: your team's ideal GP (2)

Course name:

Ranking	Characteristics	Levels		
	Team size	2 students	3 students	4 students
	Team formation approach	self-selection	random assignment	schedule availability and motivation
	# peer process evaluations	0 evaluation	1 evaluation	2 evaluation
	Type of grade	common grade	divided grade	
	Method to handle free-riding	conversation with the coordinator	member expulsion	two-card system

How to reduce FR:

Possible other characteristics / levels:

Learning activity D: class discussion

What to do now?

- Inform the other teams about your team's GP (entire group)
  - for which course did your team design the GP?
  - what is your team's order of importance for the five GP characteristics?
  - which level does your team prefers most for each characteristic?
  - how does your team's GP design help to reduce FR?
  - does your team have other suggestions to reduce FR?
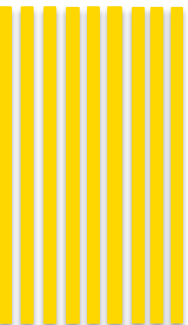
Students' preferences for GPs (1)

Example choice task
Suppose that the group project (of a newly designed course) counts for **10%** of the final course grade. Which group project would you prefer?

	Group project A	Group project B
Team size	2 students	3 students
Team formation approach	assignment based on schedule availability and motivation	assignment based on schedule availability and motivation
# peer process evaluations	1 peer process evaluation	2 peer process evaluations
Type of grade	divided grade	divided grade
Method to handle free-riding	two-card-system	member expulsion

I would prefer: ☐ ☐

Students' preferences for GPs (2)

Characteristics	Levels		
Team formation approach	self-selection	random assignment	schedule availability and motivation
# peer process evaluations	0 evaluation	1 evaluation	2 evaluation
Team size	2 students	3 students	4 students
Type of grade	common grade	divided grade	
Method to handle free-riding	conversation with the coordinator	member expulsion	two-card system

Interesting finding:
In case of a grade weight of 100% students preferred self-selection even more!

Students' preferences for GPs (3)

Link to educational video:

https://eur.cloud.panopto.eu/Panopto/Pages/Viewer.aspx?id=aa9e576b-0f64-47fc-a953-aeb500b78c44

Possibilities to reduce FR (educational literature)

- teamwork exercises

  (e.g., Deeter-Schmelz et al., 2002; Lancelotti & Boyd, 2008; O'Neil et al., 2017)

- assignments with individual and group components

  (e.g., Beard et al., 1989; Williams, et al., 1991)

- smaller team size

  (e.g., Aggarwal & O'Brien, 2008; Strong & Anderson, 1990)

- different team formation procedure

  (e.g., Bacon et al., 2001; Chapman et al., 2006; Harding, 2018, 2020; Pearlstein, 2021)

- peer evaluations

  (e.g., Beatty et al., 1996; Lejk & Wyvill, 2001; O'Neill et al., 2019; Planas-Lladó et al., 2021)

- student self-evaluations

  (e.g., Johnston & Miles, 2004; Freeman & McKenzie, 2002; Planas-Lladó et al., 2021)

- sanctioning mechanisms for free-riders

  (e.g., Abernethy & Lett III, 2005; Maiden & Perry, 2011; Van den Herik & Benning, 2021)

Possibilities to reduce FR (educational literature)

- different team formation procedure
  - self-selection (Bacon et al., 2001; Chapman et al., 2006)
  - random assignment (Bacon et al., 2001; Chapman et al., 2006)
  - learning styles (Soetanto & MacDonald, 2017)
  - schedule availability and motivation (Harding, 2018)
  - hybrid two-stage approach (self-selection + other) (Kutlubay & Uslay, 2019)
  - tendency to procrastinate (Harding, 2020)
  - team formation exercises (Pearlstein, 2021)
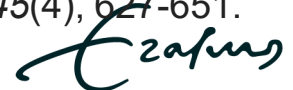
Questions?

Thank you for your contribution!

References (1)

Abernethy, A. M., & Lett III, W. L. (2005). You are fired! A method to control and sanction free riding in group assignments. *Marketing Education Review*, *15*(1), 47-54.

Aggarwal, P., & O'Brien, C. L. (2008). Social loafing on group projects: Structural antecedents and effect on student satisfaction. *Journal of Marketing Education*, *30*(3), 255-264.

Bacon, D. R., Stewart, K. A., & Anderson, E. S. (2001). Methods of assigning players to teams: A review and novel approach. *Simulation & Gaming*, *32*(1), 6-17.

Beard, J. D., Rymer, J., & Williams, D. L. (1989). An assessment system for collaborative-writing groups: Theory and empirical evaluation. *Journal of Business and Technical Communication*, *3*(2), 29-51.

Beatty, J. R., Haas, R. W., & Sciglimpaglia, D. (1996). Using peer evaluations to assess individual performances in group class projects. *Journal of Marketing Education*, *18*(2), 17-27.

Chapman, K. J., Meuter, M., Toy, D., & Wright, L. (2006). Can't we pick our own groups? The influence of group selection method on group dynamics and outcomes. *Journal of Management Education*, *30*(4), 557-569.

Deeter-Schmelz, D. R., Kennedy, K. N., & Ramsey, R. P. (2002). Enriching our understanding of student team effectiveness. *Journal of Marketing Education*, *24*(2), 114-124.

Ettington, D. R., & Camp, R. R. (2002). Facilitating transfer of skills between group projects and work teams. *Journal of Management Education*, *26*(4), 356-379.

Freeman, M., & McKenzie, J. (2002). SPARK, a confidential web-based template for self and peer assessment of student teamwork: benefits of evaluating across different subjects. *British journal of educational technology*, *33*(5), 551-569.

Harding, L. M. (2018). Students of a feather "flocked" together: A group assignment method for reducing free-riding and improving group and individual learning outcomes. *Journal of Marketing Education*, *40*(2), 117-127.

References (2)

Harding, L. M. (2020). Procrastinating together: Flocking graduate students into groups based on a shared proclivity to procrastinate. *Marketing Education Review*, *30*(2), 112-117.

Johnston, L., & Miles, L. (2004). Assessing contributions to group assignments. *Assessment & Evaluation in Higher Education*, *29*(6), 751-768.

Kutlubay, O. C., & Uslay, C. (2019). The varying role of social ties on team performance: Evidence from the marketing classroom. *Marketing Education Review*, *29*(1), 37-51.

Lancellotti, M. P., & Boyd, T. (2008). The effects of team personality awareness exercises on team satisfaction and performance: The context of marketing course projects. *Journal of Marketing Education*, *30*(3), 244-254.

Lejk, M., & Wyvill, M. (2001). Peer assessment of contributions to a group project: A comparison of holistic and category-based approaches. *Assessment & Evaluation in Higher Education*, *26*(1), 61-72.

Maiden, B., & Perry, B. (2011). Dealing with free-riders in assessed group work: results from a study at a UK university. *Assessment & Evaluation in Higher Education*, *36*(4), 451-464.

O'Neill, T. A., Hoffart, G. C., McLarnon, M. J. W., Woodley, H. J., Eggermont, M., Rosehart, W., & Brennan, R. (2017). Constructive controversy and reflexivity training promotes effective conflict profiles and team functioning in student learning teams. *Academy of Management Learning & Education*, *16*(2), 257- 276.

O'Neill, T., Larson, N., Smith, J., Donia, M., Deng, C., Rosehart, W., & Brennan, R. (2019). Introducing a scalable peer feedback system for learning teams. *Assessment & Evaluation in Higher Education*, *44*(6), 848-862.

Pearlstein, J. (2021). Experiential exercise in team formation in the capstone: Providing students with the information to make good team choices. *Journal of Management Education*, *45*(4), 627-651.

References (3)

Planas-Lladó, A., Feliu, L., Arbat, G., Pujol, J., Suñol, J. J., Castro, F., & Martí, C. (2021). An analysis of teamwork based on self and peer evaluation in higher education. *Assessment & Evaluation in Higher Education*, *46*(2), 191-207.

Strong, J. T., & Anderson, R. E. (1990). Free-riding in group projects: Control mechanisms and preliminary data. *Journal of Marketing Education*, *12*(2), 61-67.

Soetanto, D., & MacDonald, M. (2017). Group work and the change of obstacles over time: The influence of learning style and group composition. *Active Learning in Higher Education*, *18*(2), 99-113.

Van den Herik, E. M., & Benning, T. M. (2021). A students' preferences-based approach to select methods for detecting and handling free-riding. *Journal of Marketing Education*, *43*(2), 233-243.

Williams, D. L., Beard, J. D., & Rymer, J. (1991). Team projects: Achieving their full potential. *Journal of Marketing Education*, *13*(2), 45-53.

Team size

1

A distinction is made between the following team sizes:

- ❑ 2 students

- ❑ 3 students

- ❑ 4 students

Please assume that the average workload per student is the same for each team size. This means that, in general, a student in a team of two students does not have to do more work than a student in a team of three or four students.

Team formation approach

A distinction is made between the following three approaches for the formation of teams:

❑ Self-selection: Students have to select the members of their team themselves.

❑ Random assignment: Students are randomly assigned to a team.

❑ Assignment based on schedule availability and motivation: Students with similar schedules and motivation levels are assigned to a team. For this approach, students have to complete questions about their schedule availability and motivation at the beginning of the course via a short (online) survey.

Academic
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peer process evaluations

In some group projects students have to give their team members feedback via a short (online) survey in which they rate all their team members on aspects like preparation, attendance of group meetings, communication, cooperation, and exerted effort. These so-called 'peer process-evaluations', which will be shared within the team, offer students insights on how they can improve their teamwork skills. A distinction is made between the following number of peer process evaluations students need to complete:

❑ 0 peer process evaluations

❑ 1 peer process evaluation

❑ 2 peer process evaluations

If applicable, the peer process evaluations take place when they are most useful. This means somewhere at the beginning (evaluation 1) and middle of the block (evaluation 2). Note that the peer process evaluations do not count for a grade.

Academic
Skills

Type of grade

4

A distinction is made between the following types of grades:

❑ Common grade: Each team member receives the common group assignment grade given by the tutor.

❑ Divided grade: Each team member receives an individual group assignment grade based on the common group assignment grade given by the tutor and the student's relative contribution to the group assignment. This approach works as follows:

Suppose the common group assignment grade given by the tutor is 75 out of 100. Then, in case of a team of three, the team members have to divide 225 points (3 x 75) among each other. If the team members collectively decide that they all contributed equally, each student should receive 75 points. If they collectively decide that two students contributed more, these students should receive more points (e.g., both 80) and the other student less (e.g., 65). Note that a student cannot receive less than 0 or more than 100 points.

Method to handle free-riding

5

Teams who experience free-riding problems must request the offending student to amend his or her ways. If this request does not help, the team needs to make a case to the tutor. Then, a meeting will be planned with the tutor and agreements are made to improve the collaboration. It is possible that the tutor gives an official warning to the offending student to amend his or her ways by an agreed date. If the offending student did not successfully improve his or her contribution before this date, a method will be used to handle free-riding. In this survey, a distinction is made between the following three methods:

- ☐ Conversation with the coordinator: There will be a team conversation with the course coordinator to improve the collaboration. Note that this method does not impose a sanction on the free-rider.

- ☐ Member expulsion: The free-rider will be directly expelled from the team – if the other team member(s) agree with this. In that case, the offending student must complete the remaining group assignments alone.

- ☐ Two-card system: The free-rider will get a lower grade (yellow card). In case of repeated free-riding, the free-rider will be expelled from the team (red card) – if the other team member(s) agree with this. In that case, the offending student must complete the remaining group assignments alone.