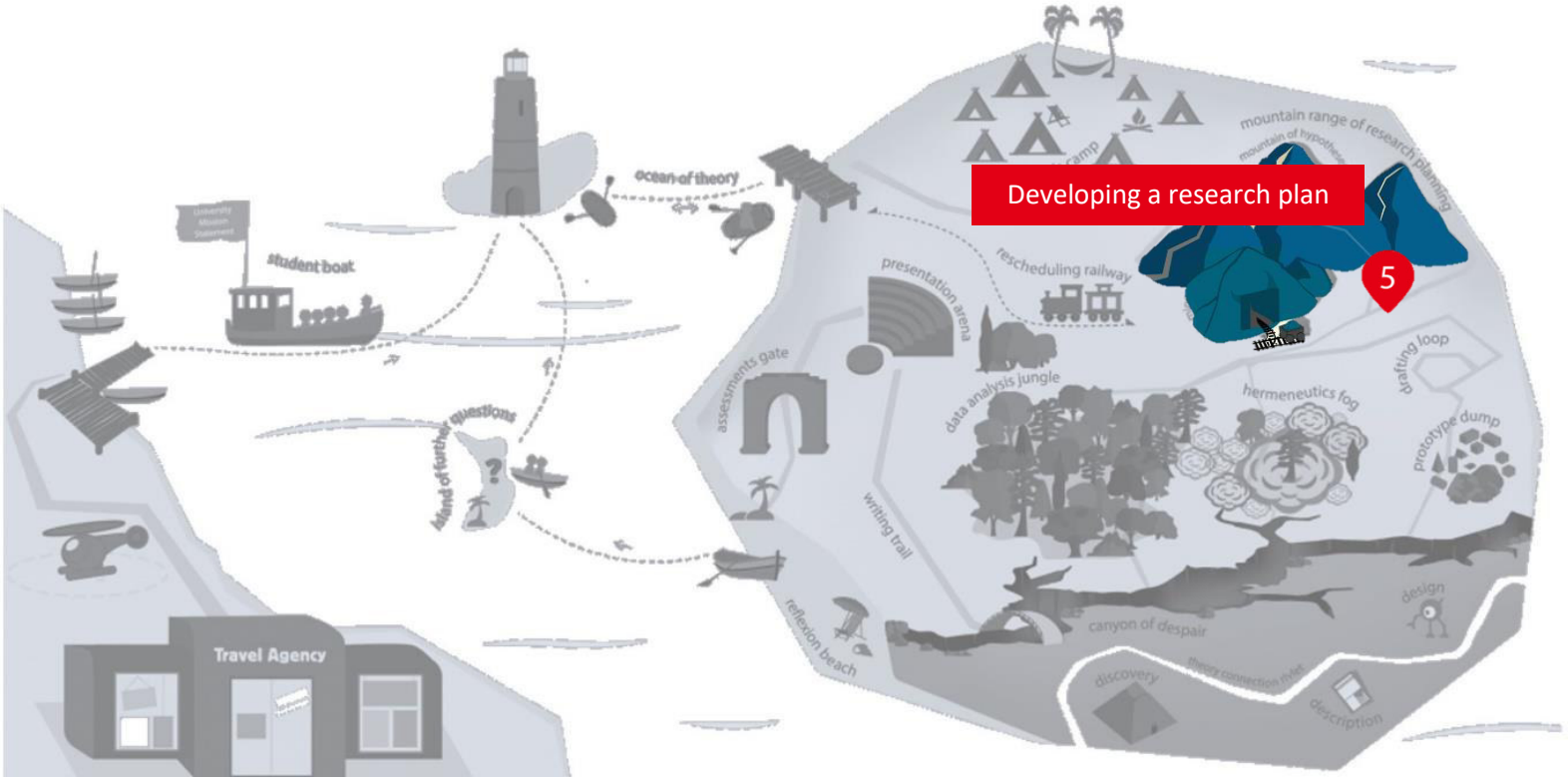
FideS
Forschungsorientierung in der Studieneingangsphase

Agreement? Impossible!

Vignette #1



KEYWORDS

GROUP DYNAMICS, STUDENT SELF-ORGANIZATION, STRUCTURE AND AUTONOMY

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#1: Agreement? Impossible

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Agreement? Impossible

At the meeting on Thursday: A project group of ten people argues. Since the first day they have not been able to agree whether they want to plan a water desalination project for a village in Namibia or a Spanish hotel. So far, the group has decided to ignore this "detail" and start the construction planning independently.

However, in the course of the discussion you notice that the subgroups plan with different prerequisites that are not compatible from a professional point of view. The students do not succeed in reaching an agreement, because giving in would mean losing their own research progress.

Keywords: Group dynamics, student self-organization, structure and autonomy

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Do you trust the students to solve the conflict on their own?

Are there team members who take on certain roles in the conflict and what follows from this?

What could the students learn from this conflict?

How can you productively use a (possible) failure for the learning process of the students/all students from this course?

How can (and will) you intervene?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Trust in the students' competence

You consider that not everything has to be taken from the students. Instead, you believe that they can act largely on their own responsibility and only need support in exceptional cases.

An appropriate action could be: You communicate your attitude to the students. You point out their self-responsibility and ask them to find a solution as a team. Only if this does not work out, you will intervene with additional measures. In this vignette situation the conflict may have already escalated to the point where the students actually need support; however, the reference to their self-responsibility may lead to the students taking responsibility after all and finding a solution themselves.

Be guided by the principle of minimal help

You are convinced that assistance is only useful if it is called for; and even then you only consider as much assistance appropriate as the students need; this also means that the students themselves are responsible for their own organisation. Your assumption: Teachers should only intervene when group work is clearly getting out of hand.

An appropriate action could be: In order to assess whether it is really necessary to intervene you have to have discussions with the students. Make them aware of their self-responsibility. If this advice does not have any effect, you as a teacher may step in – and only to the extent necessary.

Consider the heterogenity of the group as a learning opportunity

In principle you regard conflicts resulting from heterogenity as constructive sources of impulses that give the parties involved new perspectives and uncover blind spots.

An appropriate action could be/: In a discussion with the students you will highlight the advantages of this approach. In doing so you emphasise that all positions are justified (especially in the case of interdisciplinarity). You can also use the learning effects resulting from the conflict: What do the students learn in this argument? If necessary, you can give the students a new assignment and ask them to professionally process the different preconditions and basic assumptions and show why the two concepts are incompatible.

Consider challenges as reasonable

You want the students to get through challenging situations, but do not leave them alone. Instead, you offer the students advice and encourage their contemplation.

An appropriate action could be: You deliberately accept the conflict between the students, even a possible failure of the project. However, afterwards you reflect together on the benefits of the conflict, for example what was learned from it.

Accept excessive demands as a basic principle of university

You view excessive demands on students as normal and desirable and communicate this to them. You emphasise that excessive demands lead to growth.

An appropriate action could be: You initiate reflection talks with the students. Here you take up the issue of excessive demands. Together you think about the benefits of the excessive demands in this situation.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Promote the distribution of roles in a team development activity

Before the actual research is started, you initiate a team development phase. In this phase, students experience, among other things, the benefits of role allocation in the team - without being explicitly told how to do it. As a rule, students then usually decide to adopt this approach for their project work and assign different roles to each other.

Benefit of this action: If tasks and roles are clearly distributed, it can be prevented that students work in parallel or in different, non-matching directions

Offer contact persons

From the very beginning, students are regularly informed that they have contact persons in case of difficulties - even for minor questions or concerns.

Benefit of this action: If students are explicitly made aware of the available support several times, the inhibition threshold to use it tends to decrease; this can lead to disputes being professionally moderated at an early stage and not escalating.

Appoint several group spokespersons

You demand that the project groups appoint two spokespersons who will be in contact with you or the tutor.

Benefit of this action: The allocation of roles to several speakers can prevent that only one perspective on the research process is communicated and possible misunderstandings or ambiguities remain concealed. Thus, conflicts may become more visible, especially if the contact persons come from the respective conflicting "internal teams".

Accompany informally

You repeatedly ask the project groups in between informally how things are going in the project and in the group.

Benefit of this action: Frequent informal communication allows conflicts to be identified and dealt with at an earlier stage.

Employ student tutors

You suggest that there are regular tutoring sessions that are supervised by students. There, the aspect of teamwork is reflected upon, the understanding of roles in the groups is clarified and conflicts are discussed.

Benefit of this action: Supervised meetings on a regular basis offer a fixed framework in which conflicts can be dealt with – at best before they escalate.

Give individual advice for small groups in fixed sessions

You offer fixed consultation hours to the individual project groups.

Benefit of this action: There are fixed appointments for dealing with conflicts - at best before they escalate.

Provide an online forum

You organize an online forum. In this forum, students can ask and answer each other's questions. Only when questions cannot be taken up or answered by peers you or other supervisors will provide support.

Benefit of this action: In a forum, students can communicate with other groups that have the same or a similar work assignment. In this way they may become aware of contradictions and potential problems earlier. Arguments from outside the group can also be included in the discussion. In addition, supervisors can become aware of the emerging conflict earlier and support its resolution.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Use "external players" to readjust the task

From the very beginning you draft tasks as "work orders" from fictitious clients (companies, social institutions, ...) Once such a client is established, it offers a good opportunity to regulate the task and to intervene in conflicts.

Benefit of this action: If the students cannot reach an agreement or do not manage to adhere to plans on their own, the fictitious external client can adjust the assignment afterwards - according to the motto: "The company changed the assignment because the deal with Spain failed". This relieves the group of the burden of face-saving: None of the competing ideas will be rejected by the students

Provide impulses to move forward without prescribing a solution

If students make gross mistakes like working without internal coordination, you can provide them with professionally experienced contact persons who can use targeted questions (instead of direct instructions or ready-made solutions) to make it clear that this is not the way it works and to help them plan ahead. You can also assume this role yourself.

Benefit of this action: If a fundamental problem is addressed and solved early on, at least the extent of the conflict can be reduced. At best, the students themselves will quickly understand why parallel processing is not conducive to achieving the goal and will find a different way of organizing themselves.

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact.

Coach tutors

If you work with tutors who supervise the student groups, regular coaching sessions can be useful, in which the tutors are supported in small groups and in individual settings to perceive and deal with group conflicts.

Set up a Jour-Fix for tutors

If you work with tutors, you can establish a regular appointment where teachers and tutors advise each other on difficult situations.

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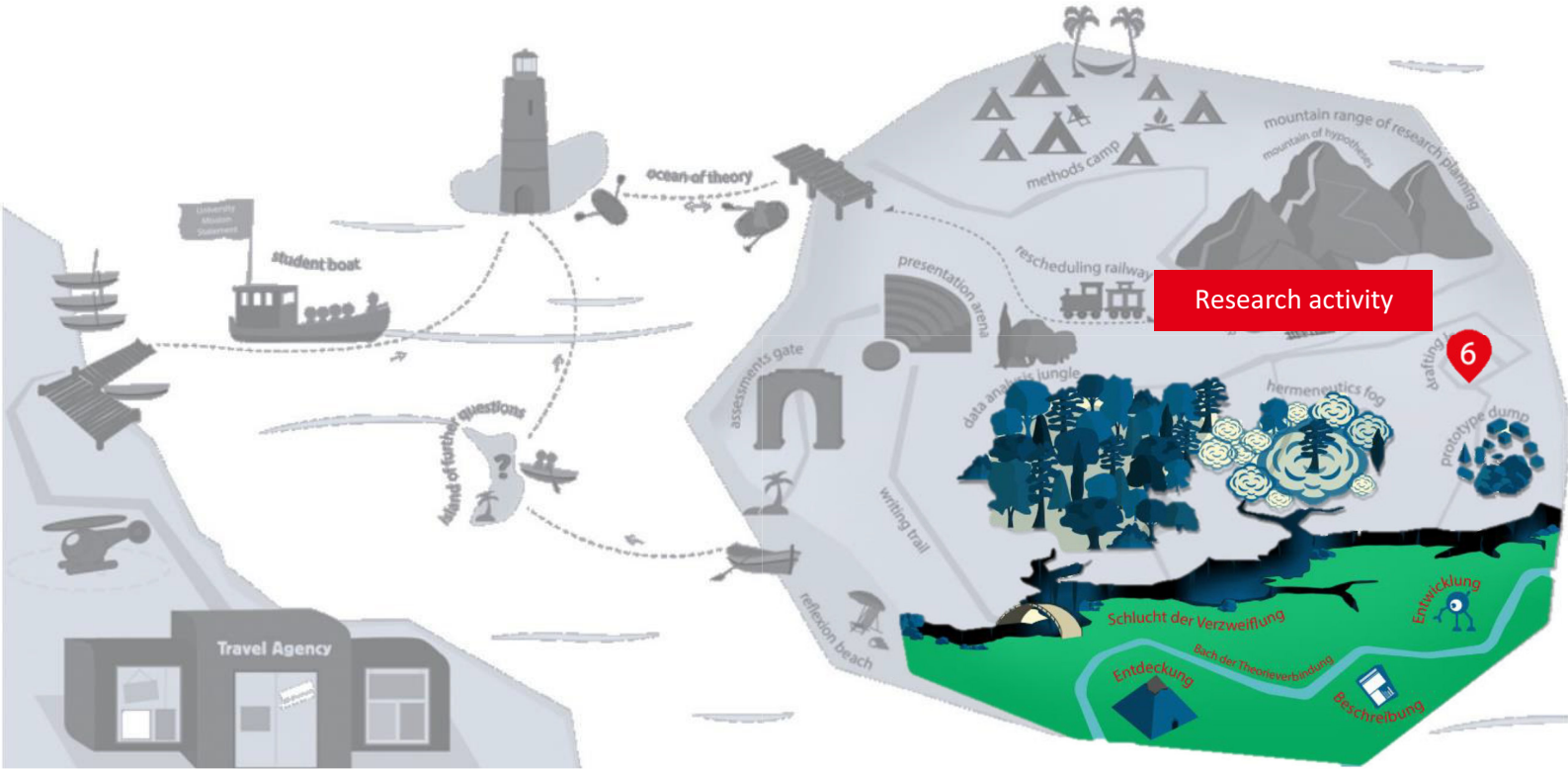
Tears at the office

Vignette #2



KEYWORDS

WORKLOAD, EXCESSIVE DEMANDS, PRIORITIES

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#2: Tears at the office

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Tears at the office

Wednesday afternoon, team meeting with the small groups of the student research projects. You noticed that one of your students seemed nervous from the very beginning of the meeting. At one point it bursts out of her: it is too much for her, she feels completely overworked, she is overwhelmed by the workload and does not know "how she is going to manage this in addition to her job and the other university obligations". You see that the student is struggling with tears.

Keywords: Workload, excessive demands, priorities

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Is the course provided with sufficient ECTS points in terms of effort involved?

How do you assess the situation of the student in comparison to the other students of the course?

Do you feel responsible for the emotions of the student?

Do you consider it your task to restore the well-being of the student?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Show confidence in the competence of the students

You consider that not everything has to be taken from the students. Instead, you believe that they can act largely on their own responsibility and only need support in exceptional cases.

An appropriate action could be : You point out to the student that it is her own responsibility whether she wants to expose herself further to this burden. You as a teacher will not relieve her of any work

Be guided by the principle of minimal help

You only provide help when it is requested and then only to the extent needed by the students. This also means that students are responsible for their own organisation. For example, students can decide for themselves whether to write protocols in which they

record decisions. Only in cases where group work is clearly getting out of hand intervention will take place.

An appropriate action could be : In order to assess whether it is necessary to intervene, have discussions with the students. You point out the confidence in their competence to your students and ask them to find a solution as a team. Only if this does not work, organise a more comprehensive meeting with the whole team. There you keep the intervention as low as possible and also make sure that nobody loses face.

Consider failure as a possibility

You think that failure should be possible, but in a way that the students do not completely lose motivation.

An appropriate action could be: The possibility that some students "fail", i.e. do not complete their project, is also conceivable and acceptable to you. Nevertheless, a first step is a discussion to try to find a solution together on how the project could be continued and completed. Alternatively, it is also possible to "officially fail" and not complete the project. In this situation, you could evaluate in an interview which skills the "failing" students have acquired through their current or previous research. Thereby, you could point out that by all means they have all the necessary basic requirements for successful research.

Preventive action

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Pre-select the participants

You decide that only those who already have certain skills (e.g. in terms of research ability) may participate.

Benefit of this action: The student would probably not have participated in the project. The participants would probably not be so easily overwhelmed if they had more experience and skills.

Offer a blog

You organize a blog where students can share and comment on each other's research status and experiences just like in an e-portfolio.

Benefit of this action: The student can share her situation and experience that she is not the only one who feels overwhelmed and receive (moral) support from other students. However, she might need an impulse from a teacher that such a blog entry might be useful.

Employ/instate student tutors

You organise regular tutoring sessions that are supervised by students. There, the aspect of teamwork is reflected upon, the understanding of roles in the groups is clarified and conflicts are discussed.

Benefit of this action: The student has a supervised setting in which she can discuss her excessive demands in the group and suggest a possible redistribution of tasks.

Use milestones

At the beginning you define milestones for the project duration so that the overall schedule is not lost sight of by the students.

Benefit of this action: The student can use this reference to assess whether she is really not in time. She can check if her feeling that everything is too much and that she is not going to make it is in line with the schedule.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures.

Address the option to quit

In a conversation you discuss the possibility of quitting. You also point out the need to pass on the tasks the student has taken on so far. You also address the consequences for all those involved - not only for the person quitting.

Benefit of this action: It is made clear to the student that dropping out is possible and that she can decide for or against it. She is no longer a "victim" of the circumstances but has an influence on how things continue.

Conduct a conversation with the entire group

You conduct a conversation with the whole group to find out whether everyone is experiencing such a great overload or whether it is an individual case. If it affects everyone, you can discuss together whether and how tasks should be readjusted.

Benefit of this action: You as a teacher can check whether there is a general need for action. Overstrained students may receive support from the group, on the one hand through solidarity, on the other hand through possible reduction of tasks by other group members.

Attention! It is important to make sure that the face of all is saved. The positions of the overstrained students in the group should not suffer from the conversation.

Help students to set priorities

In a discussion, you let the group work out what is really important for fulfilling the task: What is essential and what would only be nice to have?

Benefit of this action: You may be able to reduce the workload together with the group. In any case, a framework is created so that the work can be redistributed. This might help the student to reduce her workload.

Expose students to challenges, but allow for periods of reflection

At the end of the session you address frustrations in small groups or individually, so that students can independently identify their performance and learning success.

Benefit of this action: In a conversation with the student, you can reflect together on what she has learned so far through the challenging situation and how she can now continue in a reasonable way.

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact.

Coach tutors

If you work with tutors who supervise the student groups, regular coaching sessions can be useful, in which the tutors are supported in small groups and in individual settings to perceive and deal with group conflicts.

Set up a Jour-Fix for tutors

If you work with tutors, you can establish a regular appointment where teachers and tutors advise each other on difficult situations.

Prepare tutors

If you work with tutors, train them before the start of the project in how to handle difficult teaching situations. In the course of this, personal concerns, strengths and weaknesses of the tutors will also be discussed in one-on-one interviews.

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Forschungsorientierung in der Studieneingangsphase

Poor evaluation, excellent results; good evaluation, mediocre results

Vignette #3

Complete research cycle

KEYWORDS

STRUCTURE AND AUTONOMY, EVALUATION

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#3: Poor evaluation, excellent results; good evaluation, mediocre results

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The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Poor evaluation, excellent results; good evaluation, mediocre results

End of the course. You look at the evaluation of your course, which was really good compared to the previous ones. You made an effort to respond to the criticism of the students who felt overwhelmed by the freedom in their project in the last courses. In return, the participants had delivered really good project reports in a looser context, some of them so good that they had been published. The project results of this course, however, were mediocre at best. You are undecided whether you should not give the students more freedom yet again (and thus also more room for overstraining).

Keywords: Structure and autonomy, evaluation

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

How important are good student research results for you?

To what extent do you consider the students to be independent? How much can you expect of them?

How important is student criticism to you?

What speaks for a clearer structure, what for a freer guidance?

How important are the evaluation results for you and your teaching design?

Does the evaluation instrument measure what is important to you in the course?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Allow the experience of frustration

You assume that some frustration is part of the research process and that the students have to endure it.

This could mean on the action level: No matter whether you continue with the new or the old concept: the students are not relieved of too many research tasks.

Consider excessive demands as a basic principle of university

You consider it normal and desirable that students are overwhelmed. In conversations you make it clear to the students that it is okay and normal to be overwhelmed and what positive effects it has: excessive demands lead to growth.

This could mean on the action level: In a reflective discussion with the students, you take up the topic of excessive demands. Together you think about the benefits of excessive demands in this situation.

Trust in the students' competence

You consider that not everything has to be taken from the students. Instead, you believe that they can act largely on their own responsibility and only need support in exceptional cases.

This could mean on the action level: You return to the old, open concept and let the students make their experiences.

Be guided by the principle of minimal help

The principle is that help is only provided when it is requested and then only to the extent needed by the students. This also means that students themselves are responsible for their own organisation. For example, they can decide for themselves whether to write protocols in which they record decisions or not. Only in cases where group work is clearly getting out of hand intervention will take place.

This could mean on the action level: You return to the old concept with less pre-structuring but remain responsive to the need for assistance.

Respond to individual structural needs

You divide the project groups according to the members' need for freedom and structure. Depending on the (communicated) need of the students you either offer more freedom or more structure.

This could mean on the action level: At the beginning of the project, grouping takes place in a joint event (which could also be supported by a digital group-finding tool, such as FL-Trail). There, you communicate that you as a teacher are available for any kind of request. At the same time, you clarify beforehand how much guidance the students expect from you at the beginning and in general.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Define the research question as well as the topic in advance

In order to save time, this (difficult) part of the research cycle is set by you. The rest is done by the students.

Benefit of this action: You make sure that the students do not push themselves too hard from the beginning by posting a question that is feasible for the time frame.

Use "external players" to readjust the task

From the very beginning you draft tasks as "work orders" from fictitious clients (companies, social institutions, ...) Once such a client is established, it offers a good opportunity to regulate the task and to intervene in conflicts.

Benefit of this action: If the students do not manage to adhere to plans on their own, the fictitious external client can adjust the assignment afterwards - according to the motto: "The company changed the assignment because the deal with Spain failed". This gives you the possibility to readjust the research process for the students in a face-saving way.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Practical measures to reduce complexity:

Help students to set priorities

In a discussion, you let the group work out what is really important for fulfilling the task: What is essential and what would only be nice to have?

Benefit of this action: The complexity of the task is reduced, and the students find clear structures for themselves. The workload can possibly be reduced.

Make compromises if necessary

It should be possible to complete the task within the planned period of time or you will be able to adjust it.

Benefit of this action: The workload is reduced so that students are less stressed and have more time for the thorough documentation of their results. If necessary, the reduction by clearly defined sub-steps is also sufficient.

Request consultation with the group

If dissatisfaction is expressed, speak directly with the whole group to assess whether the excessive demands remain within limits or whether you should take action.

Benefit of this action: You gain an impression of where the problems lie and can thus specifically address problems at certain steps in the research process. You can also better assess whether the group has set itself too much of a goal and intervene in an advisory capacity.

Remove work that is not relevant to the learning process

You talk to the group to find out where the excessive demand lies and decide, if necessary, to support certain steps in a goal-oriented manner (e.g. with references, sample data, etc.).

Benefit of this action: The workload is reduced by accompanying the students out of situations of excessive demands, so that the students are relieved and can complete their project within the planned time frame and carefully document it in writing.

Use milestones

At the beginning you define milestones for the project duration so that the overall schedule is not lost sight of by the students.

Benefit of this action: A clear structure will be established for the duration of the project, which the groups can use as an orientation. They will be able to get a feeling for the approximate time needed for each phase of the research process, and it will be more likely that they will not get tangled up.

Consult working groups according to key sections

Once the groups have completed a specific research stage - for example, the drafting of a research design - advise students in small group or individual settings before moving on to the next research step.

Benefit of this action: The process is structured by the consulting appointments and the students receive concrete advice on how to deal with their respective challenges. As a teacher, you gain insight into where the difficulties lie and can react to them at an early stage (in an advisory capacity).

Direct measures to increase the "complexity tolerance" of students:

Point out personal responsibility

You communicate from the beginning that the students are responsible for the structuring of their project themselves, but that they have contact persons in case of excessive demands.

Benefit of this action: If you explicitly point out the available support to the students, the inhibition threshold tends to decrease that they use it. This can lead to students actually seeking advice when needed, but it can also make it clear to them from the very beginning that they must plan and structure the project themselves.

Create space for requests

You arrange regular meetings during which all groups in one room continue working in their small groups. You will be present as a teacher and can be asked for help if necessary and also work more intensively with a group.

Benefit of this action: You support the students indirectly to better cope with the complexity. Because you are present as a contact person and act as a "backup", students can work more relaxed.

Provide an online forum

You organize an online forum. In this forum, students can ask and answer each other's questions. Only when questions cannot be taken up or answered by peers you or other supervisors will provide support.

Benefit of this action: In a forum, students can communicate with other groups who (possibly) face similar challenges. They can advise each other and also observe that everyone experiences the research process as complex and challenging, so they are not alone with their problems.

Expose students to challenges, but allow for periods of reflection

At the end of the session you address frustrations in small groups or individually, so that students can independently identify their performance and learning success.

Benefit of this action: The students reflect almost independently on what they have achieved. Even if not everything went according to plan, you can accompany them so that they do not leave the course frustrated.

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact.

Introduce long-term evaluation

If external circumstances permit, use an evaluation tool that is designed to interview students at different points in their studies. In this way, more reliable statements can be made about how much a course designed in a certain way is perceived by students and how it is evaluated in the further course of the study.

Benefit of this action: In the long term, you can gain a better impression of whether your course concept is not only "well received" but also useful to the students in the further course of their studies and beyond.

Coach tutors

If you work with tutors who supervise the student groups, regular coaching sessions can be useful, in which the tutors are supported in small groups and in individual settings to perceive and deal with group conflicts.

Benefit of this action: The tutors receive further training and are better able to support the students in the process of research-based learning.

Set up a Jour-Fix for tutors

If you work with tutors, you can establish a regular appointment where teachers and tutors advise each other on difficult situations.

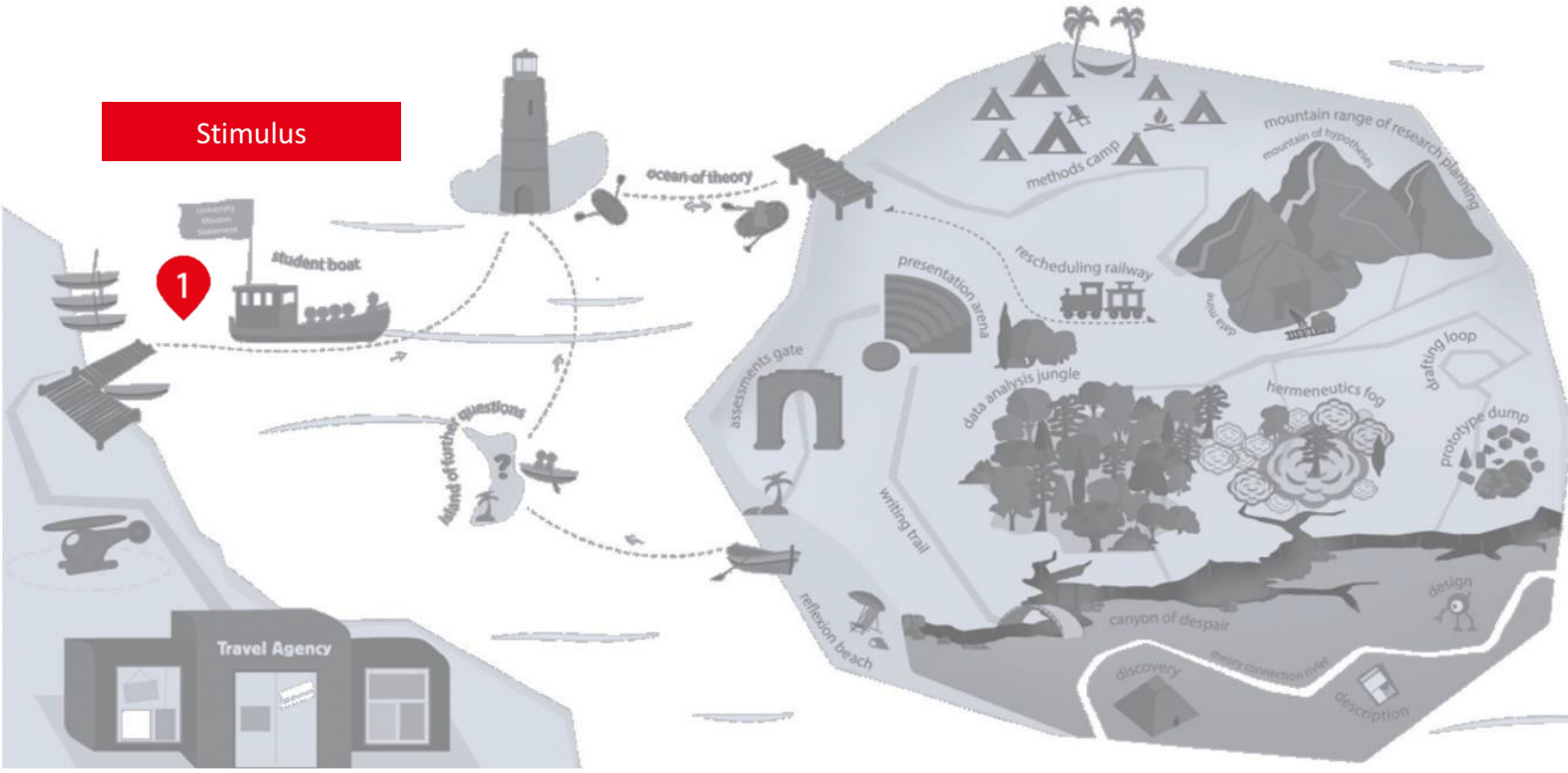
Benefit of this action: You can share your impressions of the different research results with the tutors and gain access to group processes that might otherwise be hidden. Together you can critically question which priorities you want to set, which goals you aim for with the offer of research-based learning and if and how these can be achieved.

FideS
Forschungsorientierung in der Studieneingangsphase

Cat tree

Vignette #4

Stimulus



KEYWORDS

FIRST-YEAR STUDENTS, STRUCTURE AND AUTONOMY, NEW ROLE AS A TEACHER

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Universität Potsdam

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Bundesministerium für Bildung und Forschung

Förderkennzeichen: 01PB18013

#4: Cat tree

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Cat tree

The third week in your project group. You knew you had to prepare for a challenge when you decided to run a research-based learning project with first semesters – after all, it's almost a full-time project. At the moment, you see the students every day and get to know everything. In particular, their frustration and excessive demand, for which the participants sometimes blame you. You notice a "school mentality" among the students: there is a lot of demand for the right solutions, setbacks are seen as mean, deliberate traps and you are tied to the role of the leader, while you are actually trying to give the students a lot of freedom for their own experiences and to act more as a coach.

Keywords: First-year students, structure and autonomy, new role as teacher

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Have you addressed the challenges of the project together with the students from the very beginning?

How much independence do you think your first semesters are capable of?

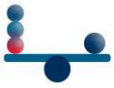
How is failure used productively for the learning processes of the students/all students in the project?

Have you discussed your own role with the students?

How would you assess/locate your previous behaviour: in the role of a manager or that of a coach?

How important is it to you that students already overcome the idea of their role as pupils (in the first semester) and do you see it as a longer-term development process?

How much does it burden you if the students are negative towards you?



Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Endure differences in role understanding

There are always students who expect service from the teachers. Instead of turning it into too much conflict, the frustration that comes with it on both sides could be "simply" endured.

An appropriate action could be: You can still try to point out via meta-communication the nature of the cooperation, the different roles of all participants and the university learning

environment (which is not school). Nevertheless, you stick to the old course. You do not give in and do not take a leadership role.

Be guided by the principle of minimal help

The principle is that help is only provided when it is requested and then only to the extent needed by the students. This also means that students themselves are responsible for their own organisation. For example, they can decide for themselves whether to write protocols in which they record decisions or not. Only in cases where group work is clearly getting out of hand intervention will take place.

An appropriate action could be: You communicate to the students at the beginning of the project that you will adhere to this principle and what this means for the students: namely, that they will have to come to you in case of problems and that you will not give them solutions, but only give them (thinking) impulses to get a step further.

Enable experiences of failure that are not personal defeats, but can be operationalised

Mistakes are part of it. From mistakes, students should learn something new and develop further. It is important that failure is not seen as the end result. Instead, it specifically reflects what went wrong and how the students can avoid it the next time.

An appropriate action could be: You address at the beginning that research cannot and must not always go the "straight way". If something does not go as planned and you are accused of it by the students, use metacommunication to discuss what the students have learned through this "wrong track". It is relevant that this is not prestated by you as a teacher, but that the students recognize it for themselves as much as possible. However, this requires competent guidance from you as a teacher, for example through constructive questions.

Promote passion

Research-based learning usually aims not only at acquiring skills and new experiences of students, but also at having a framework that enables them to discover and follow their own interests.

An appropriate action could be: You point out their freedom to the students, in conversations you focus on the interests expressed and show possibilities to pursue them.

Let students work together who are not keen on each other

In group works, students are often allowed to choose their project partners. Especially in the first semester there is a lack of references and experience in which group constellation one works best. In addition, there is a lack of experience with other

students, and so it can quickly happen that one or the other is left with group members with whom cooperation seems impossible. For students this can be an almost unbearable burden from their perspective, which is often passed on to the teachers. However, since in the following working life of the students, teamwork rarely takes place with elective partners, it can be a strategy to let the students endure it and let them understand what advantages they can gain from it.

An appropriate action could be: Complaints about the group constellation are returned to the students with the request to take care of it themselves and, if necessary, to seek a clarifying conversation within the group. Only in extreme situations (such as the complete boycott of members) do teachers interfere as a regulating element.

Preventive action

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Organise a conferenc to arouse intrinsic motivation

At the end of the semester, a conference organized by the teachers will take place at which students can present their results.

Benefit of this action: The idea of presenting their own results to peers and teachers usually motivates the students very much – the conference format also illustrates once again the university framework in which the work takes place. In addition, the presentation reflects the independent development of the presentation results.

Set a motivating final product as a goal

The feeling of working on something relevant motivates the students to get involved. Motivating final products can, for example, be those that have a real practical benefit.. This can also be achieved through community-based research. Another possibility is that the students' research results contribute to an ongoing research project, so that students see their contribution as part of something bigger.

Benefit of this action: Students do not regard their work as a "homework" without any further relevance. They are held accountable and understand that their research is not only for their own learning, but also for a greater good.

Intervening action

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures.

Reflect at the end of the course

In a reflection meeting at the end of the course, a discussion will be held again about how the students evaluate the process and where they may have felt "let down". The teacher moderates the conversation in such a way that the students understand how much they have learned through these situations and that it was intended that the students were overwhelmed in between.

Benefit of this action: Even if the students may be outraged at first, they can see what they have achieved on their own. At best, they understand that they would not have learned so much if they had been guided more closely.

Offer stronger leadership advice

Teachers can also respond to students' concerns, answer questions, provide professional impulses and make decisions for students.

Benefit of this action: Students who are more closely supervised make fewer mistakes, complete tasks in less time (because they make fewer mistakes) and are therefore, overall, more satisfied. Students would complain less because their demanded leadership would be provided. However, this measure tends to move away from the basic assumptions of research-based learning.

Offer regular consultation appointments for the small groups

On regular, e.g. weekly appointments, the small groups are advised individually.

Benefit of this action: Bad mood does not immediately spill over into the entire plenum, but in part can be discussed in the small group concerned. In addition, time is used efficiently by addressing individual concerns, rather than trying to reconcile the many concerns expressed in plenary. This takes a lot of time, but brings a lot of benefits and has proven to be effective.

Readjust if there is too much frustration

If you feel that the mood is becoming too destructive, or you cannot or do not want to withstand the negative attitude of the students any longer, you can also decide to readjust the task and make it easier.

Benefit of this action: Students feel taken seriously in their concerns. They experience that their needs are heard and they are relieved.

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact..

Introduce tutorial process monitoring that provides feedback on social skills

The project groups are accompanied by a tutor. The task of this team support is not to guide the students, but to observe the process, to give feedback to individual participants and the overall groups. The content of the feedback is, for example, the discussion behaviour, problem solving behaviour, moderation skills, etc. Finally, a group report is created in which the process is mapped. The tutors must be trained in advance for these tasks.

Benefit of this action: The students are made aware of their own role by the process attendants. They can be made aware of their immature behaviour". The feedback also provides an opportunity to think about how one wants to perform: What role do I want to play in the group? What social skills do I want to show?

Train mentors

Mentors can also be used for the process of offering research-based learning. However, they must first be prepared for this task, for example by dealing with difficult teaching situations, learning about prevention and intervention measures and by sitting in practice.

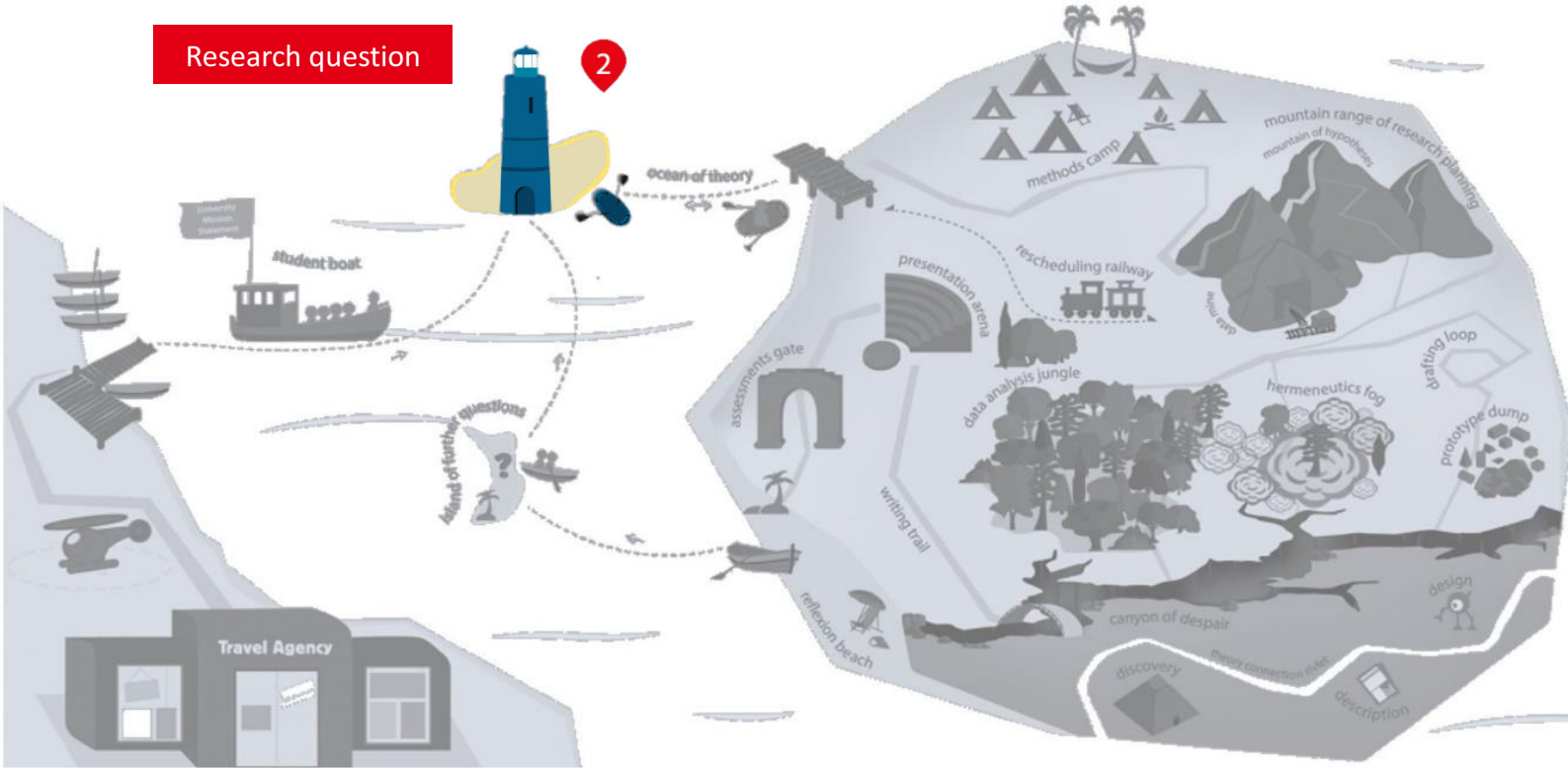
Benefit of this action: Mentors have a different effect than the observing and feedback-giving tutors. Mentors take on moderating tasks and thus provide more "guidance".

FideS
Forschungsorientierung in der Studieneingangsphase

The curse and blessing of freedom

Vignette #5

Research question



KEYWORDS

STRUCTURE AND AUTONOMY, CONTENT-RELATED FOCUS, FIRST-YEAR STUDENTS, WORKLOAD

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#5: The curse and blessing of freedom

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

The curse and blessing of freedom

Monday night after the meeting. You're exhausted, once again it's been running longer than planned. On the one hand, you are enthusiastic about the energy of your students, who throw themselves enthusiastically into their research projects and come up with new ideas at every meeting. On the other hand, you notice that you invest a lot of time and energy in every meeting to get the students back on track, to dampen unrealistic plans and to give impulses for new ideas when you notice that there are blind spots. One third of the course has already passed and you know that time is becoming increasingly scarce to go through the research process in full, especially with the inventiveness of the participants. But you also do not want to restrict the students in their process too much.

Keywords: Structure and autonomy, content-related focus, first-year students, workload

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

How important is it for you that students go through the research process completely?

How independent do you consider the students to be?

Have you considered the option of failure didactically?

How much can you expect the students to do in the remaining time?

What are the advantages and disadvantages of more structuring, what are the advantages and disadvantages of looser guidance?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Adapt your management style to the group

You consider the students as the process owners. You adapt your teaching to whether the students demand closer or more open supervision. To do this, you clarify at the beginning of the project what each role means and what the students want. In intermediate discussions you clarify whether your role is still appropriate for the needs of the students at the moment. In doing so, you point out possible problems - such as lack of time.

An appropriate action could be: The students are responsible for the design of the process. At the same time, as a "neutral authority", the teacher can point out obstacles without assuming responsibility for the process.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Use microformats to take up existing capabilities

At the beginning of the project you ask the students what they are already capable of. Adapted to these results they develop the project to be carried out. This does not have to cover the entire research process, but can also only cover individual research steps, such as developing a research question, collecting material or evaluating existing material. Another possibility would be to narrow down methods and subject areas.

Benefit of this action: Students have less freedom and can therefore work in a more focused and goal-oriented manner. This makes it easier to stick to the given time frame. In addition, the learning objectives can be better aligned to the project.

Adapt timetable to the rest of the term plan

Already in the conception you pay attention to the rest of the term plan, especially to exam phases. Setting milestones can be helpful in process control.

Benefit of this action: Neither teachers nor students are surprised that in certain study phases students suddenly have less time for the research project. This knowledge supports a more consistent awareness of the timetable on both sides.

Support team coordination in advance

At the beginning of the project you hold a "project organisation meeting". There you will introduce different roles that can be taken over by the students: e.g. minute taker, timekeeper, project leader, etc. You also let the students decide which communication channels should be used when and how. Alternatively, a team training can be conducted, in which the students understand through the exercises that are carried out that a division of roles can be useful.

Benefit of this action: The teacher is not responsible for the success or failure of the project. Through their roles, students have an increased awareness of issues such as documentation of results, timing and decision making, and thus responsibility for their own project progress.

Stretch over two terms

From experience you have learned that one term-time for a project of research-based learning is very short. Therefore, you have arranged for your course to extend over

two terms. It is anchored in the curriculum accordingly and provided with an appropriate number of credit points.

Benefit of this action: There is relatively much time for the project. Therefore, there is more time to let the students find their own way.

Take plenty of time to define the research question

You allow for a few weeks in which the students spend most of their time trying to find a question.

Benefit of this action: A well planned research question helps to keep the focus. It also helps you as a teacher to get the students back "on track" without becoming directive: The students have a clear vision of their goals, which acts as an anchor in the process of developing ideas.

Keep close contact to the students at all times

You are in close contact with the students. You always create opportunities for short questions and find out what kind of support the students need.

Benefit of this action: Overflowing ideas quickly become visible to you and can be captured by you informally. Alternatively, you can suggest larger meetings if you feel that a more formal setting for the meeting is needed.

Use milestones

At the beginning of the course, you work out a plan with the students to determine which intermediate results ("milestones") they need to achieve their goals. You embed these milestones together in a schedule. This enables students to estimate when they should have reached which milestones.

Benefit of this action: The clearly visible timetable makes it obvious to students when they should stop incorporating new ideas. They understand that it is time to complete a milestone.

Define the research question as well as the method in advance

At the beginning of the project you define the research question (and thus the research topic), but also the methodology. This enables you to prepare the students methodically in a way that fits them perfectly. You can also ensure that the students deal with topics in which you yourself are an expert.

Benefit of this action: Students are well equipped with a good research question and a method from the very beginning and can therefore work in a focused way. Ideas from them can be countered with reference to the research question and method and students have more time for research overall.

Outsourcing learning of research methods in workshops

You do not try to teach students certain methods during the research process. Instead, you either offer methodological workshops yourself or advertise existing offers.

Benefit of this action: Questions or discussions on methods can be "outsourced" to other contexts, thus saving time and energy. Furthermore, some of the students' ideas turn out more realistic when they have learned more about the methods and the corresponding workload.

Assess the skills and previous knowledge of the students in advance

You discuss the students' previous knowledge and skills with regard to the planned project in an interview at the beginning of the project. This way the students already know among themselves who can be approached for which topics. At the same time, deficits become apparent and you can estimate how extensive the project can realistically become.

Benefit of this action: You have a realistic picture of what the group can achieve. For example, you can point out that learning certain methods is time-consuming and thus lead the students back to realistic goals.

Provide basic knowledge on scientific project implementation in advance

At the beginning of the semester, you hold a course that teaches the basics of what research actually is, how it is defined in your subject and how projects can be structured.

Benefit of this action: The students have learned in advance to better structure themselves and each other. They are better able to estimate workloads and to commit themselves to plans.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Make compromises

You make compromises, for example, by allowing students not necessarily to complete the process after all. Alternatively, you can cut out parts of the process, make decisions yourself, or otherwise relieve the students of work.

Benefit of this action: Through the time saved at a later stage, students have more room in the initial phase to explore possibilities, interests and approaches.

Demand agreements within the group

If you notice that the students ask you to make decisions, or if they do not appear in a coordinated manner in the meetings with you, you ask them to first make agreements within the group.

Benefit of this action: The internal agreement without the "authority" present has several advantages: Firstly, there is more "clarity" in the group meeting. Conflicts are dealt with or sharpened to such an extent that they can be better dealt with. This saves time and nerves in the meeting situation with you. In addition, the students experience that they can also make decisions independently. Finally, it also means that the students are introduced to taking responsibility themselves.

Implement peer-to-peer feedback

Right from the start of the project, you can guide students to compose collaborative essays or a research portfolio. The different project groups should each create a product that receives feedback from other project groups during the process.

Benefit of this action: A portfolio or essay provides structure for the students. You as a teacher can also use it to regulate which questions the students should deal with at what time. Through peer feedback, students can give each other suggestions, but also draw attention to mistakes and correct each other. A further bonus is that the resulting product can also be an artifact that can be used later for evaluation. (Just like the feedback.)

Consult in small groups as well as in plenary sessions

You meet the students alternately in the overall plenum and in small groups.

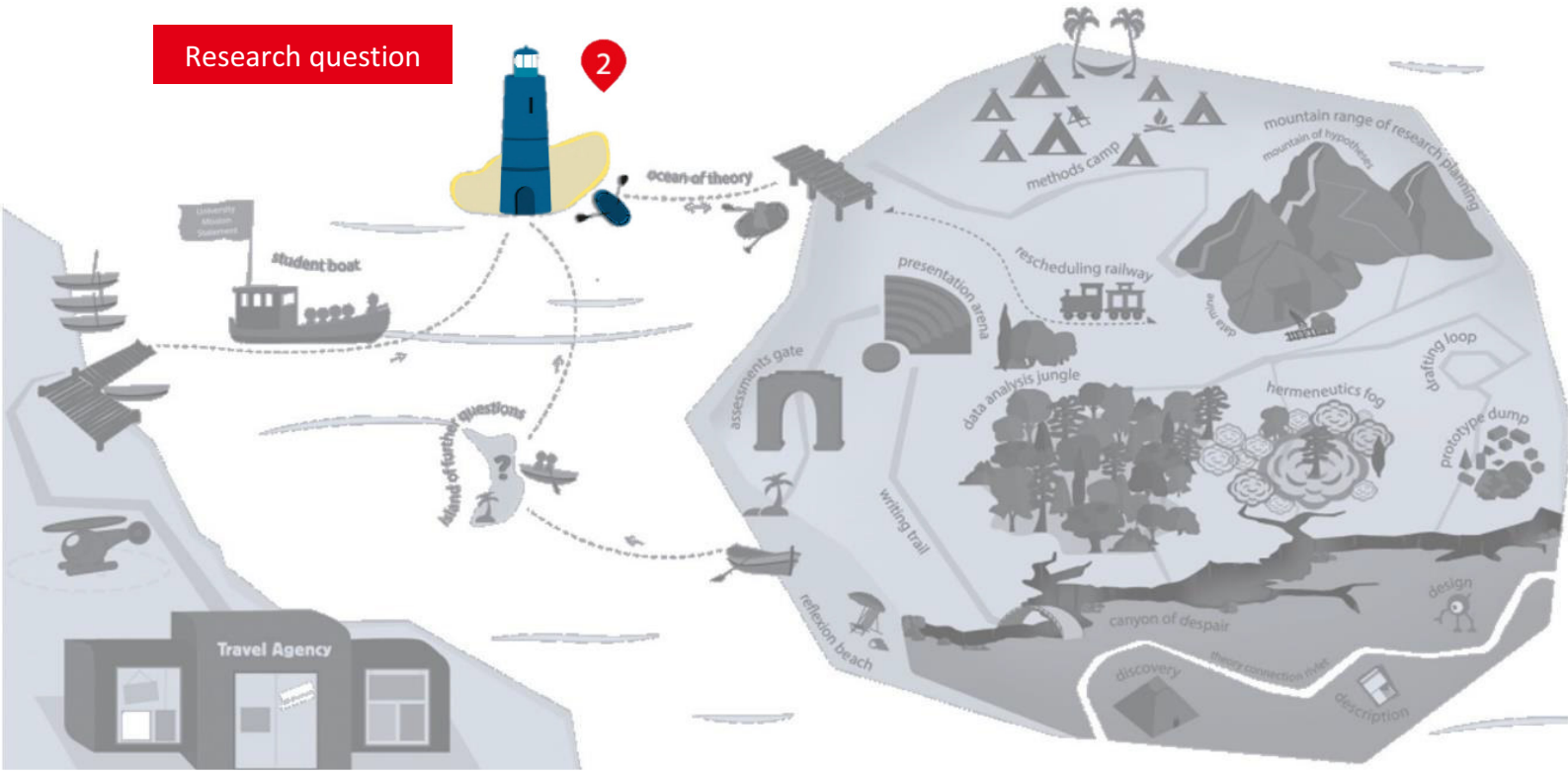
Benefit of this action: It is easier for you to respond to the needs of the small groups. At the same time, synergies can become apparent in the plenary sessions.

FideS
Forschungsorientierung in der Studieneingangsphase

Time is running (out)

Vignette #6

Research question



KEYWORDS

STRUCTURE AND AUTONOMY, CONTENT-RELATED FOCUS, FIRST-YEAR STUDENTS, WORKLOAD

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Förderkennzeichen: 01PB18013

#6: Time is running (out)

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The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Time is running (out)

Mid-term. You are on your way home after your class – half satisfied half thoughtful. The group was - as so often - incredibly open to discussion. They are always enthusiastic after the lessons. However, you also notice that you are not making enough progress with the research process because of this; the time frame is simply not enough to accommodate the joy of discussion and all research steps at the same time. You are undecided how to deal with this; whether you should slow down the discussions to put a stronger focus on the content, or whether there are other ways to deal with the situation. After all, you very much welcome the great interest and controversy in the meetings.

Keywords: Structure and autonomy, content-related focus, first-year students, workload

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Does the project have to be completed - in its entirety or within the planned time frame?

What other experiences should the students gain in the course of this project?

Which advantages and disadvantages speak for a clearer structure, which for freer guidance?

What positive (learning) effects can you observe from the detailed discussions with the students?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Adapt your management style to the group

They have the attitude that the students are the process owners. You adapt your teaching to whether the students demand closer or more open supervision. To do this, you clarify at the beginning of the project what these different forms of supervision mean and what the students want. In intermediate discussions you clarify whether your role is still appropriate for the needs of the students in the current project phase. In doing so, you point out possible problems - such as lack of time.

An appropriate action could be: The students are responsible for the process. At the same time, the teacher can point out obstacles without taking responsibility for the process.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Use microformats of research to take up existing capabilities

At the beginning of the project you ask the students what they are already capable of. Adapted to these results they develop the project to be carried out. This does not have to cover the entire research process, but can also only cover individual research steps, such as developing a research question, collecting material or evaluating existing material. Another possibility would be to narrow down methods and subject areas.

Benefit of this action: Students have less freedom and can therefore work in a more focused and goal-oriented manner. This makes it easier to stick to the given time frame. In addition, the learning objectives can be better aligned to the project.

Adapt timetable to the rest of the term plan

Already in the conception you pay attention to the rest of the term plan, especially to exam phases. Setting milestones can be helpful in process control.

Benefit of this action: Neither teachers nor students are surprised that in certain study phases students suddenly have less time for the research project. This knowledge supports a more consistent awareness of the timetable on both sides.

Support team coordination in advance

At the beginning of the project you hold a "project organisation meeting". There you will introduce different roles that can be taken over by the students: e.g. minute taker, timekeeper, project leader, etc. You also let the students decide which communication channels should be used when and how. Alternatively, a team training can be conducted, in which the students understand through the exercises that are carried out that a division of roles can be useful.

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Stretch over two terms

From experience you have learned that one term-time for a project of research-based learning is very short. Therefore, you have arranged for your course to extend over

two terms. It is anchored in the curriculum accordingly and provided with an appropriate number of credit points.

Benefit of this action: There is relatively much time for the project. Therefore, there is more time to let the students find their own way.

Take plenty of time to define the research question

You allow for a few weeks in which the students spend most of their time trying to find a question.

Benefit of this action: A well planned research question helps to keep the focus. It also helps you as a teacher to get the students back "on track" without becoming directive: The students have a clear vision of their goals, which acts as an anchor in the process of developing ideas.

Keep close contact to the students at all times

You are in close contact with the students. You always create opportunities for short questions and find out what kind of support the students need.

Benefit of this action: Overflowing ideas quickly become visible to you and can be captured by you informally. Alternatively, you can suggest larger meetings if you feel that a more formal setting for the meeting is needed.

Use milestones

At the beginning of the course, you work out a plan with the students to determine which intermediate results ("milestones") they need to achieve their goals. You embed these milestones together in a schedule. This enables students to estimate when they should have reached which milestones.

Benefit of this action: The clearly visible timetable makes it obvious to students when they should stop incorporating new ideas. They understand that it is time to complete a milestone.

Define the research question as well as the method in advance

At the beginning of the project you define the research question (and thus the research topic), but also the methodology. This enables you to prepare the students methodically in a way that fits them perfectly. You can also ensure that the students deal with topics in which you yourself are an expert.

Benefit of this action: Students are well equipped with a good research question and a method from the very beginning and can therefore work in a focused way. Ideas from them can be countered with reference to the research question and method and students have more time for research overall.

Outsourcing learning of research methods in workshops

You do not try to teach students certain methods during the research process. Instead, you either offer methodological workshops yourself or advertise existing offers.

Benefit of this action: Questions or discussions on methods can be "outsourced" to other contexts, thus saving time and energy. Furthermore, some of the students' ideas turn out more realistic when they have learned more about the methods and the corresponding workload.

Assess the skills and previous knowledge of the students in advance

You discuss the students' previous knowledge and skills with regard to the planned project in an interview at the beginning of the project. This way the students already know among themselves who can be approached for which topics. At the same time, deficits become apparent and you can estimate how extensive the project can realistically become.

Benefit of this action: You have a realistic picture of what the group can achieve. For example, you can point out that learning certain methods is time-consuming and thus lead the students back to realistic goals.

Provide basic knowledge on scientific project implementation in advance

At the beginning of the semester, you hold a course that teaches the basics of what research actually is, how it is defined in your subject and how projects can be structured.

Benefit of this action: The students have learned in advance to better structure themselves and each other. They are better able to estimate workloads and to commit themselves to plans.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Make compromises

You make compromises, for example, by allowing students not necessarily to complete the process after all. Alternatively, you can cut out parts of the process, make decisions yourself, or otherwise relieve the students of work.

Benefit of this action: Through the time saved at a later stage, students have more room in the initial phase to explore possibilities, interests and approaches.

Demand agreements within the group

If you notice that the students ask you to make decisions, or if they do not appear in a coordinated manner in the meetings with you, you ask them to first make agreements within the group.

Benefit of this action: The internal agreement without the "authority" present has several advantages: Firstly, there is more "clarity" in the group meeting. Conflicts are dealt with or sharpened to such an extent that they can be better dealt with. This saves time and nerves in the meeting situation with you. In addition, the students experience that they can also make decisions independently. Finally, it also means that the students are introduced to taking responsibility themselves.

Implement peer-to-peer feedback

Right from the start of the project, you can guide students to compose collaborative essays or a research portfolio. The different project groups should each create a product that receives feedback from other project groups during the process.

Benefit of this action: A portfolio or essay provides structure for the students. You as a teacher can also use it to regulate which questions the students should deal with at what time. Through peer feedback, students can give each other suggestions, but also draw attention to mistakes and correct each other. A further bonus is that the resulting product can also be an artifact that can be used later for evaluation. (Just like the feedback.)

Consult in small groups as well as in plenary sessions

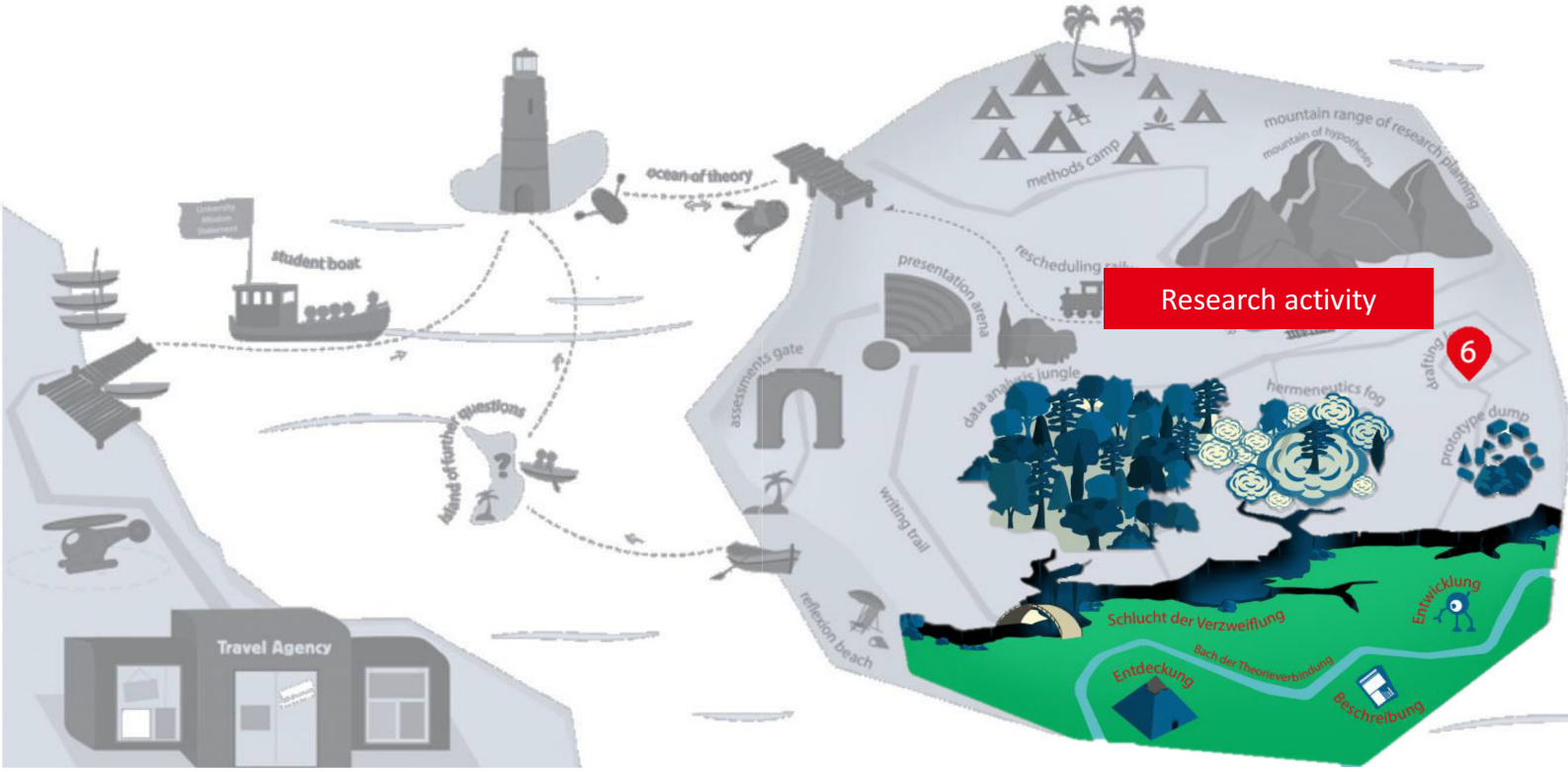
You meet the students alternately in the overall plenum and in small groups.

Benefit of this action: It is easier for you to respond to the needs of the small groups. At the same time, synergies can become apparent in the plenary sessions.

FideS
Forschungsorientierung in der Studieneingangsphase

Shooting stars and lame ducks

Vignette #7



KEYWORDS

STRUCTURE AND AUTONOMY, WORKLOAD, STUDENT MOTIVATION, QUESTIONS OF JUSTICE, DIFFERENCE AND HETEROGENEITY

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#7: Shooting stars and lame ducks

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Shooting stars and lame ducks

Mid-term. The course is half over and you notice that there are big differences in performance and motivation between your project groups. In addition to a thin midfield, there are two top-notch groups, whose motivation and research progress you are very impressed by. In addition, there are also two groups that do not really get going and one team that simply does the bare minimum. You are unsure how you want to handle this. On the one hand, the course is aimed precisely at personal responsibility and self-structuring. On the other hand, the groups do not realize how far apart they are, so you would have to act as a regulating element - if you wanted to do so at all.

Keywords: Structure and autonomy, workload, student motivation, questions of justice, difference and heterogeneity

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Have you made your standards for work results transparent in advance?

How satisfied or dissatisfied would you be with very heterogeneous results?

Which advantages and disadvantages speak for a clearer structure, which for a freer guidance?

Do you see yourself responsible for regulating the process?

If you would influence the process: Would you do it for your own sake or for that of the students?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Let students design the processes on their own

You are convinced that students should take responsibility for their own project. You assume that teachers should only intervene in cases where group work is clearly getting out of hand. Consequently, you do not care about differences in performance during the process.

An appropriate action could be: You stand back and do not interfere with the process.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Conduct team development before the start of the project

At the beginning of the project you organise an (external) team development programme for the participants. The students experience the positive effects of structuring the team through different roles - such as minute-taker, timekeeper, speaker, devil's advocate, etc.

Benefit of this action: The groups are instructed to structure themselves better and to work more goal-oriented.

Determine a contact person for the lecturer

At the beginning you ask for at least one contact person per group, with whom you regularly hold short, informal consultations.

Benefit of this action: This is a relatively informal way to communicate with groups in a low-threshold way and to easily check group goals and satisfaction. At the same time, you can also influence the process more effectively, or at least present options for action more easily.

Ask about the structuring needs of the groups

At the beginning of the course you can ask the students how much they would like to be supervised and how much structure they would like. Depending on this, you can then respond to their wishes.

Benefit of this action: From the beginning, students take responsibility for how much you as a teacher are involved in the process of the individual group. Consequently, you do not have to decide for yourself whether to readjust.ermine für die Kleingruppen anbieten:

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact.

Deploy team facilitators

You can use tutors as team facilitators, for example. They observe the process and provide feedback on group behaviour and the research process at regular intervals. At the end of the course they could also write a summary of their observations for the students about students behaviour in the research and group process.

Benefit of this action: The team facilitators are providing feedback, thus differences or even deficits become explicit and the students can decide what to make of them.

Use project presentation as a feedback opportunity

At the end of the course, you make time for a session in which students present their results to each other.

On the one hand, students know from the very beginning that they are responsible for their own results and may therefore work with a little more commitment. On the other hand, they also see at the event what could have been achieved in the time available and thus receive feedback on their process through comparison with peers. In this case, the benchmark is not set by an authority figure like the teacher, but by the performance of the others.

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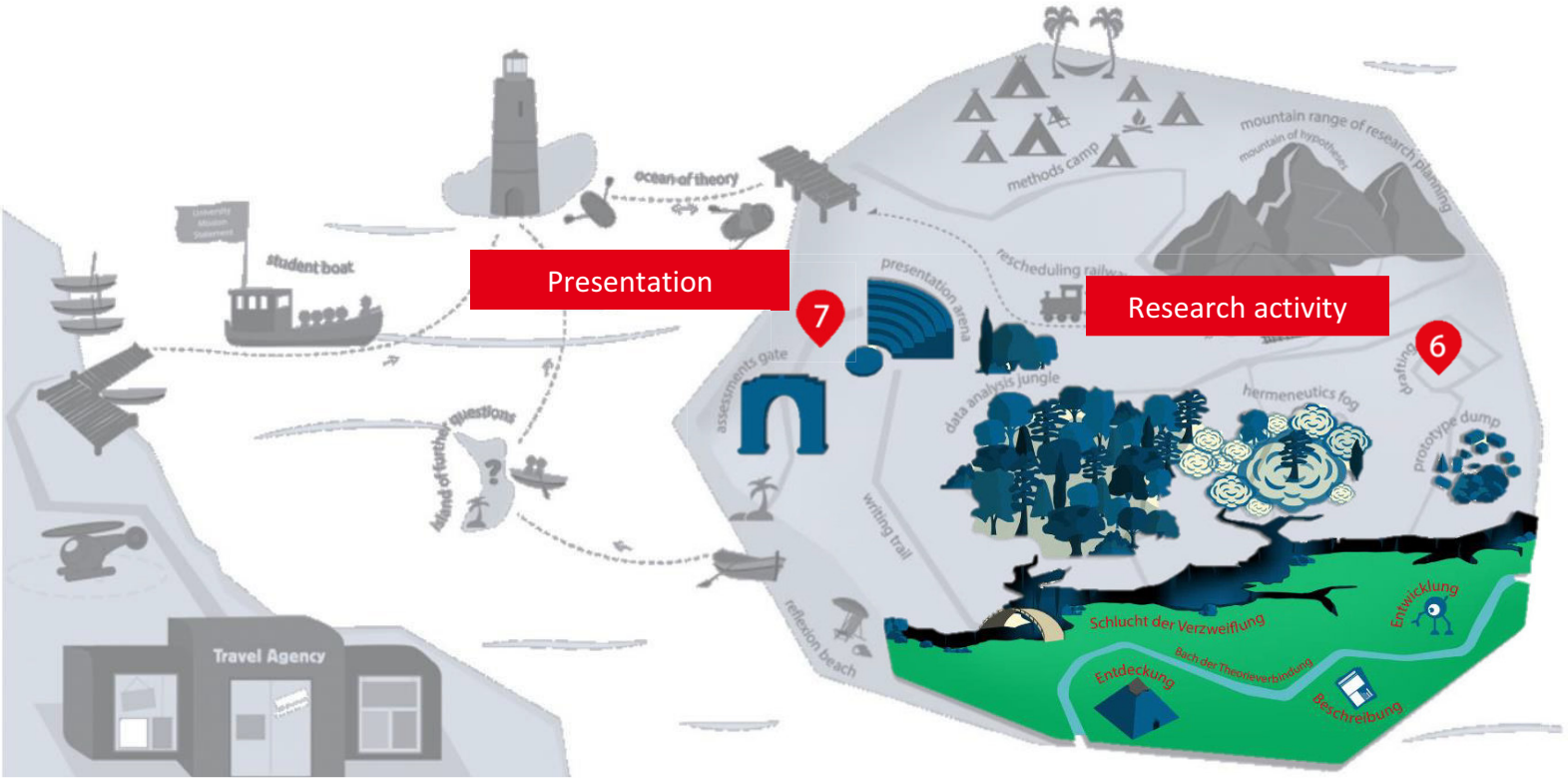
Forschungsorientierung in der Studieneingangsphase

Dead end

Vignette #8



KEYWORDS
HANDLING FAILURE

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#8: Dead end

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The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Dead end

You are in a project meeting. The longer you talk to the students, the more obvious it becomes: The students have already put a lot of energy into their concept, but as a group they have lost their way: the concept cannot and will not work that way. In addition, time is slowly running out to start all over again and to design a new project that will still produce results. You are now considering how best to proceed with the students.

Keywords: Handling failure

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

How can you talk to students about their failure without discouraging them ("failure as termination")?

How could a compromise look like (e.g. realization of partial goals and components that would be feasible ("failure as a lack of experience"))?

Do you see yourself as responsible for supporting students in coping with the consequences of failure?

What can students possibly learn from the experience of failure?

Think about your own learning experience: how did you react to failure during your studies?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Consider failure as normal

You consider failure to be part of the research. This happens to you, your colleagues and of course to the students - it is a normal part of science.

This could mean on the action level: You talk openly with the students, preferably at eye level: this means standing up for your own failures and communicating that this is part of everyday life in science. Students recognize that this is a learning experience and feel encouraged to set new goals.

Consider and accept failure as a learning opportunity

In your opinion, failure can help students gain valuable experience and get to know the reality of research. Therefore, you do not intervene to avoid hurdles or unplanned difficulties that the students (and you) often cannot foresee. But you make sure that students - despite all the frustration - see a learning outcome at the end of the process.

This could mean on the action level: On the one hand, you honestly convey to the students that their project is not leading to the desired result. On the other hand, they make the point that mistakes are part of research and that they do not have to take failure personally. Together with the students and at eye level, you consider how things should now continue.

Preventive action

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Provide opportunities for consultation with experts

You provide your students with the opportunity to talk regularly with competent advisers about their state of research. This can help to ensure that risks of failure are identified and dealt with at an early stage.

Benefit of this action: Through communication, risk factors for failure can be identified. In this way, some mistakes can be either avoided or corrected through certain tips. The exchange with someone other than the usual lecturer has a motivating effect and opens new perspectives for the students.

Indirectly draw attention to problems in advance

Even if you are already aware of potential problems, do not point them out to students during counselling sessions. Instead, you should ask questions in such a way that the students themselves recognise these challenges.

Benefit of this action: Failure as serious as described in this situation could be avoided by early indirect intervention. However, this requires sufficiently close cooperation with the students so that you as a teacher can notice students getting astray in time. In addition, such a "Socratic discussion" requires time and practice.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Communicate to students that something has gone wrong

You tell the students that the process is not conducive to achieving the objectives.

Benefit of this action: It is very important that failure is addressed openly. A bad, unplanned or unexpected result is also a result. Students are confronted with the fact that research can go against expectations. In the first place, students should become aware that making mistakes is not unusual, but a learning opportunity. In a discussion, the students can reflect together on what went wrong and what they can do better in the future.

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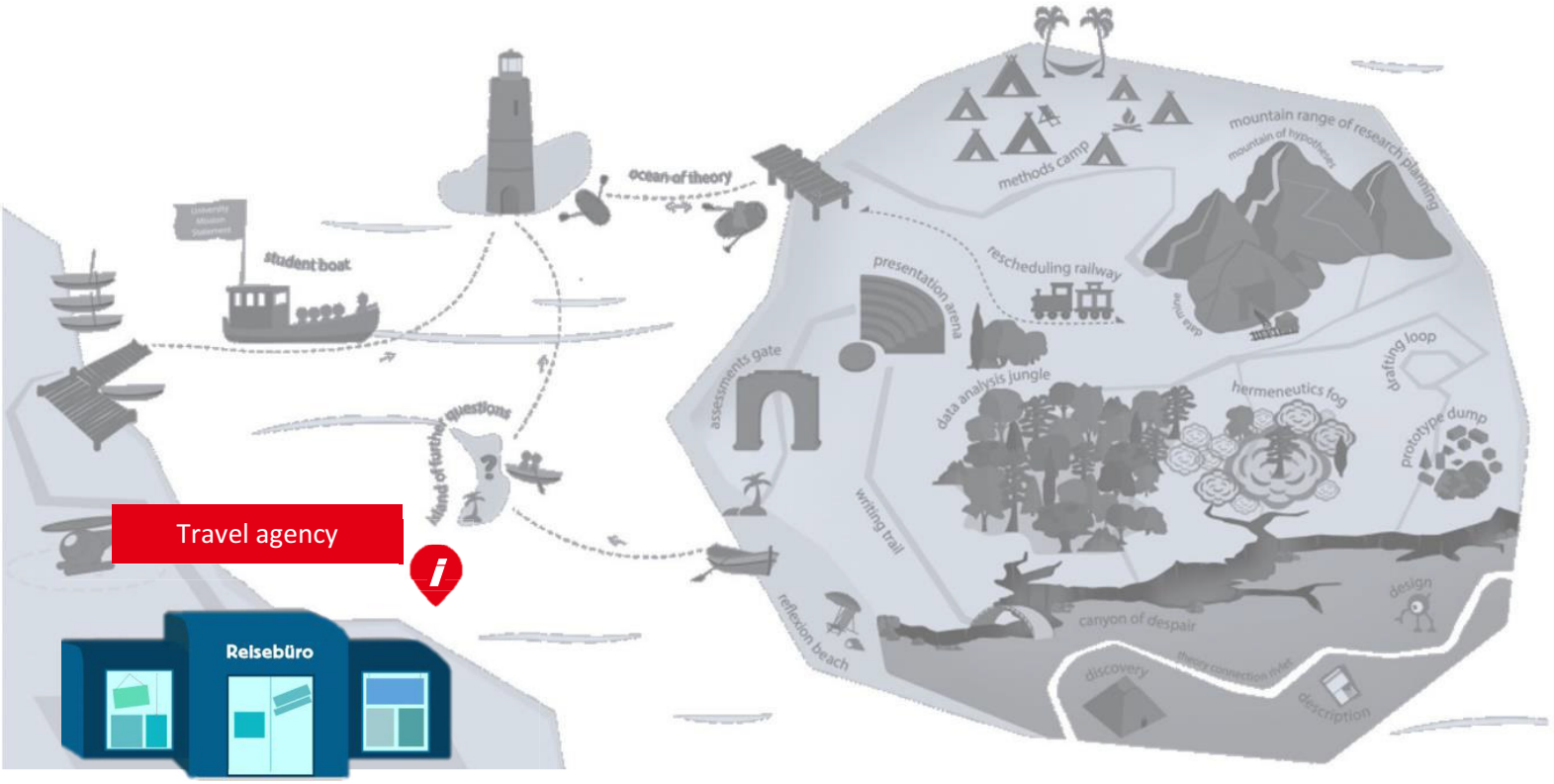
Forschungsorientierung in der Studieneingangsphase

Exam stress

Vignette #9



KEYWORDS
EXAMS

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#9: Exam stress

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Exam stress

Planning for the upcoming study course. You are already full of anticipation because this time you are finally offering research-based learning in a seminar. You have almost completely worked out the concept. But there is still a big gap in the plan: What should the examination of the students look like? After all, you do not yet know what the students will ultimately learn in the course of their research activities. In addition, there are module requirements that you have to adhere to - but do they really fit into your new format?

Keyword: Exams

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Which experience of the students has the highest priority for you in your course concept - and how could an examination be designed for this?

What are the module requirements at your university?

Which artefacts of the students that arise in the research process are suitable for examination?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Actions

In the following, approaches are outlined that were described by the interviewed coordinators of research-based learning provision.

(E-)Portfolio as examination format

Students create an (e-)portfolio during the course of the semester, for which you initially determine the structure. It can take on very different forms, for example, it can be used for documentation, planning and reflection purposes, e.g. as a report portfolio. It can also be composed of various artifacts, such as meeting documentation, written work, but also moderation services, etc.

Benefit of this action: The students can use the structuring elements of such an (e-)portfolio for the ongoing process. This will also encourage them to reflect on the process again and again. If the portfolio is used as an examination, the examination phase is thus distributed over the entire project duration. This allows not only the final result to be evaluated and given feedback, but the entire process to be reviewed.

Presentation of results at a conference or to partners in practice

You organize the participation at a conference where the results of the student research projects are presented, plan your own small (poster) presentation or, if necessary, the presentation of the results to partners in practice.

Benefit of this action: Students have the opportunity to get to know the professional context in which they conduct their research and can use the high standards to motivate themselves. By presenting the results to third parties, they also experience a genuine part of the research process.

Set the drafting of an application for research funding as exam

The students work out a fictitious funding application for a real institution.

Benefit of this action: Students must first deal with the potential object of research, explore the state of research, define a research question and select a suitable method. In this way they already gain a deep insight into essential steps of a research process. In addition, the students are familiarized with the modalities of applying for funding.

Ungraded exam performance

If the examination regulations do not necessarily require grading, you can, for example, use minutes, reports, presentations of results or simply the artefacts created in the research process (as direct evidence of research performance) as a prerequisite for passing.

Benefit of this action: The focus is shifted away from the grade to the actual process, which gives the students the opportunity to act more independently and to be more critical of their own work.

Group work with recognisable personal contribution

Students hand in a term paper or project report prepared in the group and mark their own text sections.

Benefit of this action: Students do not have to deliver an "unnatural" individual performance if they have worked in groups; nevertheless, their own contribution is clearly visible, so that grading can be done individually.

Combined exam

If a written exam is planned for the course, but you also want to include the results of the research project in the grading, you can split the assessment equally between the written exam and the presentation of results.

Benefit of this action: If you cannot do without the written exam, this will ensure that the project presentation are also given high priority and do not risk being treated by students as secondary.

Process-oriented project report

In the project report, students should explain how their research process has progressed and explain why they have made certain decisions.

Benefit of this action: The evaluation is rather oriented towards reflection than towards the outcome of the research process. Students can experience that, for example, the disclosure of challenges and naming of limitations is part of scientific work.

Presentation in front of a jury

Students present the results of their research project to a jury, e.g. from the faculty or to more advanced students.

Benefit of this action: In addition to presenting the results, students must also prepare for critical questions from the jury and practice defending their research work.

Multistage procedure

Students first tackle an individual research question (based on the major topic) in the context of a small term paper. Then students with similar questions join together in groups and write a joint research exposé. At the end of the research activity, a final conference is held at which students present their results to the university public.

Benefit of this action: You combine several partial performances so that the note is not based on a single artifact. The evaluation of the exposé and the presentation of results also emphasises the importance of these phases of the research process.

First paper ungraded

Before the actual examination you have a first draft prepared, which is commented but - in contrast to the examination at the end of the project - not graded.

Benefit of this action: The resulting ideas and texts are much more open and bolder when it is clear that they will not be evaluated equally, which can have a positive effect on the course of the project and the motivation of the students.

Let students design exam questions themselves

Instead of designing an exam yourself to check the learning progress, you can delegate this task to the students.

Benefit of this action: n research-based learning, it is almost impossible to set single learning goals beforehand and to check their achievement. When students think about their own examination tasks, they are encouraged to reflect on what they have learned in the course and what they actually remember. The examination can then be made up of developing the questions and answering them. You can still decide on the form of editing (individually in attendance or a freer format) after viewing the exam questions.

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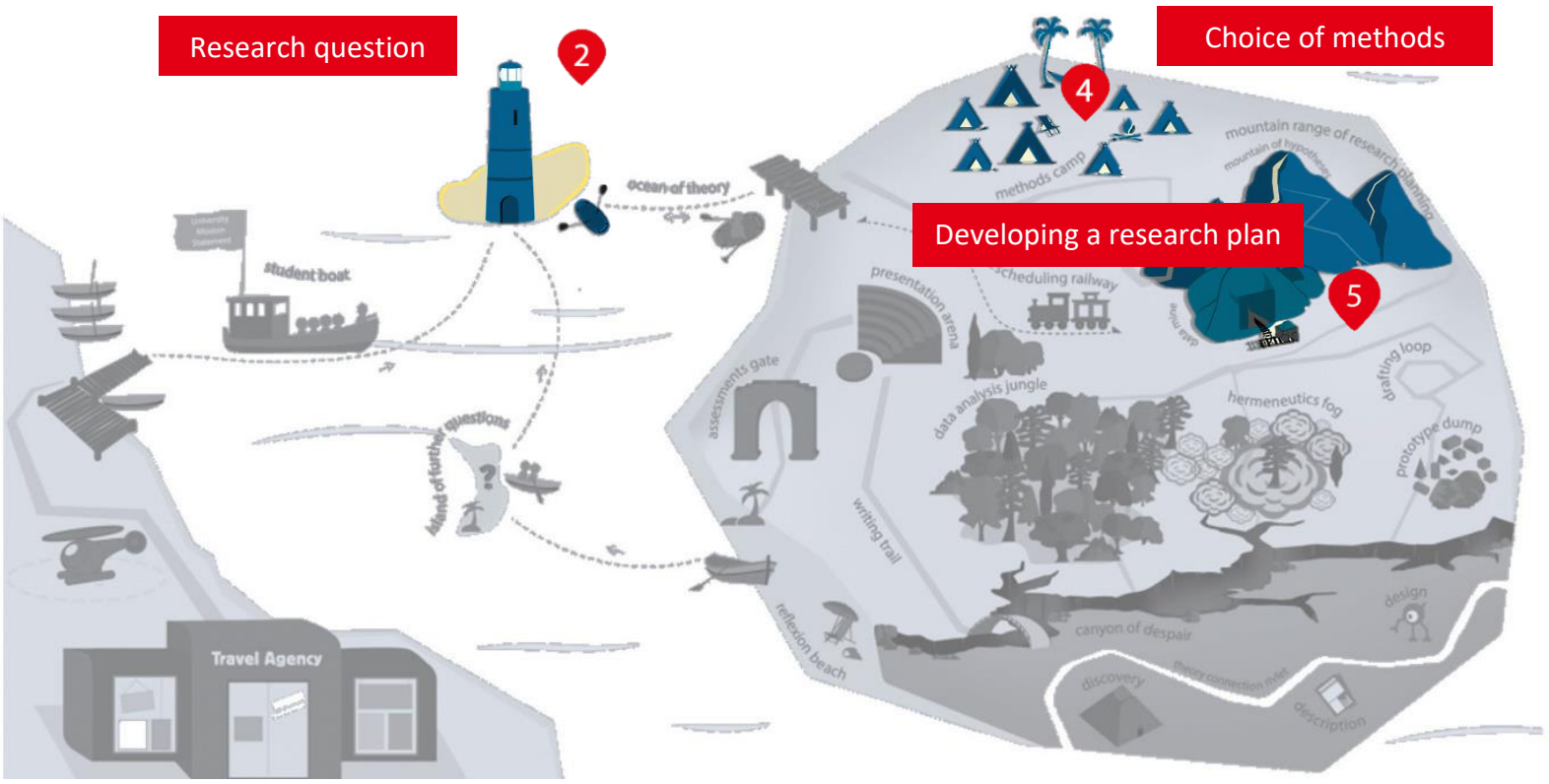
About searching and finding

Vignette #10



KEYWORDS

LACK OF RESEARCH COMPETENCE, TIME & WORKLOAD

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#10: About searching and finding

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The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

About searching and finding

Wednesday night. After you noticed in your course that students do catastrophic literature review - read whole books that do not even really have anything to do with the field of research, describe outdated findings or simply complain that they "find nothing" in general - you offered your own course on appropriate literature review. The course was half self-pitying for the students and half productive, but you didn't even manage to convey the basics. A little perplexed, you set off on your way home.

Keywords: Lack of research competence, time & workload

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Are there any external offers for scientific work that you can point out to the students?

How much autonomy do you grant your students in developing the research question, research plan and implementation?

What would change if you were to give more guidance on the research question?

What do you know about the students' course of studies and possible previous knowledge from other courses?

Could you also be satisfied with a low scientific quality of the research work?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Accept the fact that there is a lack of methodological skills at the beginning of the course

You are aware that the students are only at the beginning of their studies and may have little experience with scientific working techniques.

An appropriate action could be: You can provide students with additional support within the framework of your course, such as handouts or references to external offers and point out your own availability in case of problems. At the same time, you also see the difficulties as an important opportunity for the students to learn.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Provide guidelines for project work

You develop a guideline for the project work, which illustrates the process and also contains an exemplary overview of recommended methods.

Benefit of this action: You can issue this guide (or parts of it) when needed. Also outline here which method is appropriate and when. For basic scholarly work e. g. literature search with reference to databases, many departments have guidelines which you could also make available to students.

Issue a guide to scholarly work

If there is a guide to scholarly work in your department, distribute it at the beginning of the event or as needed. If it does not exist, this would be an opportunity to develop such a sustainable handout.

Benefit of this action: If students lack basic skills in scholarly work, they can find valuable tips and advice on basic working techniques here.

Create an explanatory video

You create a video that explains the basics of research or other scholarly working techniques.

Benefit of this action: Especially when it is to be expected that other students will also have similar problems, it is worth making an explanatory video. Tell from your own experience and keep the production effort low, even simple videos can be effective. Students can deal with them outside of attendance time so that your course planning is not affected.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Offer basic advice

You allow students to address you in the course of their literature search, for example by discussing the literature list together - individually, in a plenary session or in the working group.

Benefit of this action: Students receive targeted feedback on their review status and concrete advice on where further investigation is worthwhile. They benefit from your expert advice in both theoretical and methodological terms. This also saves you time.

Outsourcing learning of research methods in workshops

You recommend offers for methodological learning to your students, which are offered independently of your course.

Benefit of this action: The students can specifically improve their methodological skills and benefit from this in the ongoing project without you having to spend resources on it. Workshops or crash courses also offer the advantage that students can use them as required and so in rather heterogeneously composed groups nobody will be bored with the "basics".

Issue a method guideline

You prepare a guideline for the project work, which describes the process and also contains an exemplary overview of recommended methods.

Benefit of this action: Once prepared, you can issue this guide (or parts of it) when needed, i.e. when things get stuck at certain points. For example, you can outline possible usage scenarios for selected methods. For basic research work, entry points, databases, etc., many departments have guidelines for scientific work, which you can also make available to students.

Set up an extended project meeting

You extend the usual attendance time to a three-hour window to address the gaps that exist.

Benefit of this action: There is a fixed date on which the gaps can be filled. Such an extended time slot offers the advantage that you can work together with the students to deal with the problem in greater depth.

FideS
Forschungsorientierung in der Studieneingangsphase

The ups and downs of student research competence

Vignette #11

Complete research cycle

KEYWORDS

DIFFERENCE AND HETEROGENEITY, LACK OF RESEARCH COMPETENCE

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#11: The ups and downs of student research competence

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

The ups and downs of student research competence

Sunday afternoon. Your weekend, actually. In principle it is, but your course situation keeps popping up in your mind: The students are busy, have found a research question and are working on it. So far so good, however, you have noticed that the methodological skills of the different groups are very different. For example, you have heard excerpts from the interview transcript of one group - it is brimming over with suggestive questions and yes-no questions, and it is also very long. Others have produced a very good interview guide, but are worried about making mistakes during the interview and are afraid to go into the field.

Keywords: Difference and heterogeneity, lack of research competence

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Is the quality of the students' research important to you?

What do you want to use your resources for?

Do you want to have a balancing effect by supporting the weaker ones more or do you want to devote comparable amounts of time and energy to all project groups or participants?

How important is a relatively homogeneous level of quality of the results of the individual groups to you?

What opportunities do the students have throughout the course to learn from their own mistakes and those of their fellow students?

What learning goals do you have for the students? At which point should they be taught the knowledge? In the process or in the assessment?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Be guided by the principle of minimal help

The principle is that help is only provided when it is requested and then only to the extent needed by the students. This also means that students themselves are responsible for their own organisation. Only in cases where group work is clearly getting out of hand intervention will take place.

An appropriate action could be: In order to assess whether it is really necessary to intervene you have to have discussions with the students. Make them aware of their self-responsibility. If this advice does not have any effect, you as a teacher may can step in – and only to the extent necessary.

Let students design the process on their own

You want to give the students room to shape the process independently and to gain experience by themselves.

An appropriate action could be: You are holding back on recommendations. Even when concrete help is requested, you always offer a variety of options and describe the advantages and disadvantages as neutrally as possible, so that the students ultimately make their own decisions based on their alternative courses of action.

Consider excessive demands as a basic principle of university

You consider it normal and desirable that students are overwhelmed. In conversations you make it clear to the students that it is okay and normal to be overwhelmed and what positive effects it has: excessive demands lead to growth.

An appropriate action could be: In a reflective discussion with the students, you take up the topic of excessive demands. Together you think about the benefits of excessive demands in this situation.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Ask about the structuring needs of the groups

At the beginning of the semester you can ask the students how much they would like to be supervised and how much structure they would like. Depending on this, you can then respond to their wishes.

Benefit of this action: From the beginning, students take responsibility for how much you as a teacher are involved in the process of the individual group. Consequently, you do not have to decide for yourself whether to readjust.

Conduct team development before the start of the project

Before the actual research is started, you initiate a team development phase. In this phase, students experience, among other things, the benefits of role allocation in the team - without being explicitly told how to do it. As a rule, students then decide to adopt this principle for their project work and assign different roles to each other.

Benefit of this action: Roles such as content or process guardians could be assigned, whose task is to identify deficits and, if necessary, to call for help. Teams can become more efficient with this measure.

Appoint several group spokespersons

You demand that the project groups appoint two spokespersons who are in contact with you or with the tutors.

Benefit of this action: Appointing speakers can prevent that only one perspective on the research process is communicated and that possible misunderstandings or ambiguities remain hidden.

Offer contact persons

From the very beginning, students are regularly informed that they have a contact person in case of difficulties - even for minor questions or concerns..

Benefit of this measure for the case vignette situation: If students are explicitly pointed out to the existing support several times, the inhibition threshold to use it tends to decrease.

Use microformats of research to take up existing capabilities

At the beginning of the project you ask the students what they are already capable of. Adapted to these results they develop the project to be carried out. This does not have to cover the entire research process, but can also only cover individual research steps, such as developing a research question, collecting material or evaluating existing material. Another possibility would be to narrow down methods and subject areas.

Benefit of this action: Students have less freedom and can therefore work in a more focused and goal-oriented manner. This makes it easier to stick to the given time frame. In addition, the learning objectives can be better aligned to the project.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Outsourcing learning of research methods in workshops

You do not try to teach students certain methods during the research process. Instead, you either offer methodological workshops yourself or advertise existing offers.

Benefit of this action: Questions or discussions on methods can be "outsourced" to other contexts, thus saving time and energy. Furthermore, some of the students' ideas turn out more realistic when they have learned more about the methods and the corresponding workload.

Issue a method guide

You develop a manual in which the most common methods for your project are briefly outlined, application scenarios and advantages and disadvantages are described, and reference is made to the common literature.

Benefit of this action: The students have a point of reference to help them decide on a method and also further literature to help them become more familiar with their chosen method.

Issue a guide to scholarly work

If there is a guide to scholarly work in your department, distribute it at the beginning of the event or as needed. If it does not exist, this would be an opportunity to develop such a sustainable handout.

Benefit of this action: If students lack basic skills in scholarly work, they can find valuable tips and advice on basic working techniques here.

Create explanatory videos

You create a video that explains the basics of research or other scholarly working techniques.

Benefit of this action: Especially when it is to be expected that other students will also have similar problems, it is worth making an explanatory video. Tell from your own experience and keep the production effort low, even simple videos can be effective. Students can deal with them outside of attendance time so that your course planning is not affected.

Set up an extended project meeting

You extend the usual attendance time to a three-hour window to address the gaps that exist.

Benefit of this action: Such an extended time slot offers the advantage that you can work together with the students to deal with the problem in greater depth.

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact.

Deploy team facilitators

You can use student tutors as team facilitators, for example. They observe the process and provide feedback on group behaviour and the research process at regular intervals. At the end of the course they could also write a summary of their observations for the students about students behaviour in the research and group process.

Benefit of this action: The team facilitators are providing feedback, thus differences or even deficits become explicit and the students can decide what to make of them.

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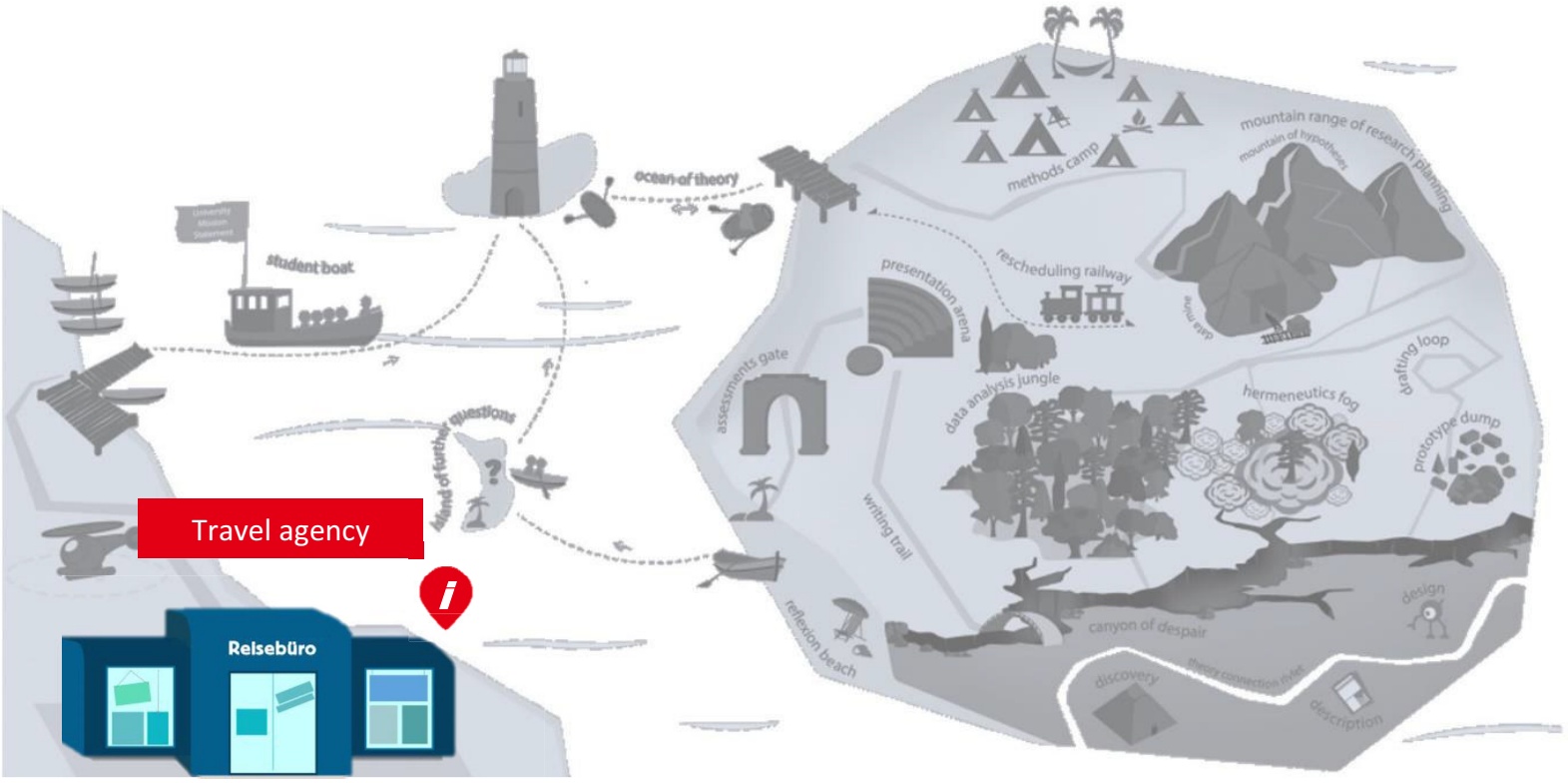
Forschungsorientierung in der Studieneingangsphase

Octopus

Vignette #12



KEYWORDS

TIME AND SCOPE OF WORK, ECONOMICS, TUTORING SESSIONS

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#12: Octopus

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Octopus

End of the course. You have to admit that you cannot carry out the project in the same way again. It takes too much time and too many resources. After all, you have invested almost three times as much hours in the event as planned. The main reason for this were the many questions the students asked you about their research process - not demanding and often rather reassuring questions, but in the end there were over 500 e-mails to be answered (even if some were very short) and not a single consultation hour that was kept within the planned time. You know that the department management very much welcomes your project and would possibly provide funds for one or two student assistants. However, for this you would need a good concept for tutorial supervision of the students in your course.

Keywords: Time and scope of work, economics, tutoring sessions

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Can you optimise your own (analogue and digital) working methods and communication channels?

Which tasks could you outsource?

What skills would student tutors need to take on these tasks?

How can you establish peer-feedback procedures so that students advise each other?

Could you initiate that experienced students from the preceding courses pass on their knowledge to younger cohorts?

Framework for and types of involvement of tutors

This vignette does not present any attitudes and actions. Instead, the framework for the involvement and types of involvement of tutors are presented, adapted to the topic.

Create a framework

This section discusses possible aspects of framework conditions for the use of student tutors.

Training of student tutors

Before the student tutors are deployed, they first have to be trained. Possible topics include an introduction to research-based learning, moderation, dealing with difficult learning situations and research data management.

Benefit of this action: The student tutors receive a theoretical basis for their work and are prepared for a wide variety of situations so that you will receive fewer requests or need for support from the student tutors during the process.

Enable sitting in on classes

The future tutors should be given the opportunity to observe ongoing tutorials.

Benefit of this action: The student tutors can familiarise themselves with the situation in tutoring sessions and get an idea of possible procedures and challenges. In addition, they have contact persons to ask basic questions.

Organise regular meetings with tutors

It is advisable to provide student tutors with regular opportunities for exchange (among themselves and with you).

Benefit of this action: On the one hand, the student tutors can consult with each other, on the other hand, you as a contact person are also available within reach in case of challenges and can provide support.

Request a letter of motivation

You demand a letter of motivation from the applicants in which they should explain their skills and abilities as well as their expectations of the job.

Benefit of this action: An insight into the student tutor's ideas clarifies the need for preparation or sorts them out immediately..

Types of involvement of tutors

This section discusses possible ways of involving tutors.

Enable consultation with tutors

You organise a weekly question time with student tutors. There the students can first ask their questions if they are unsure about something.

Benefit of this type of involvement: The student tutors act as filters so that only big questions are passed on to you as a teacher. Disadvantage: The student tutors must be well trained and take responsibility.

Enable close supervision by tutors

Instead of you as a teacher, student tutors supervise the students. You are available to the tutors for reinsurance.

Benefit of this type of involvement: You as a teacher will be relieved of the burden. For the supervisors it is a great learning opportunity. Disadvantage: The student tutors must be well trained and take responsibility.

Organise peer-review of submissions by tutors

Student submissions are evaluated in a review process. This process is carried out and accompanied by student tutors, so that the submissions are improved in several loops.

Benefit of this type of involvement: The students receive additional input for their submissions. In addition, you as a teacher are relieved twice over: Firstly, you are relieved of the feedback task, and secondly, students may be more courageous during the process because they know that their submission is not yet a final one.

Enable in-depth work

In accompanying sessions led by student tutors, open questions are taken up and worked on, but also new ones are raised in order to gain more depth.

Benefit of this type of involvement: The students deal with the contents in greater depth. You as a teacher do not have to invest more time for this.

Enable social cement

Student tutors can also be deployed to uncover and deal with disagreements and conflicts to avoid escalation.

Benefit of this type of involvement: You as a teacher can deal with questions of content. In addition, students work more productively because less energy is invested in conflicts.

Deploy team facilitators

You can use tutors as team facilitators, for example. They observe the process and provide feedback on group behaviour and the research process at regular intervals. At the end of the course they could also write a summary of their observations for the students about students behaviour in the research and group process.

Benefit of this action: The team facilitators are providing feedback, thus differences or even deficits become explicit and the students can decide what to make of them.

Establish an interdisciplinary pool of student tutors

Instead of appointing student tutors for individual projects, you could also put together a general pool of student tutors. The student tutors are thoroughly trained and can be requested for different tasks. On the one hand, this results in interdisciplinary exchange, and on the other hand, the level of supervision can be increased, since the student tutors gain a wide range of experience.

Benefit of this type of involvement: If necessary, you can use the student tutors across projects. This also means that they do not have to be used from the beginning to the end of the project. They do not have to fill hours if there is no need for them.

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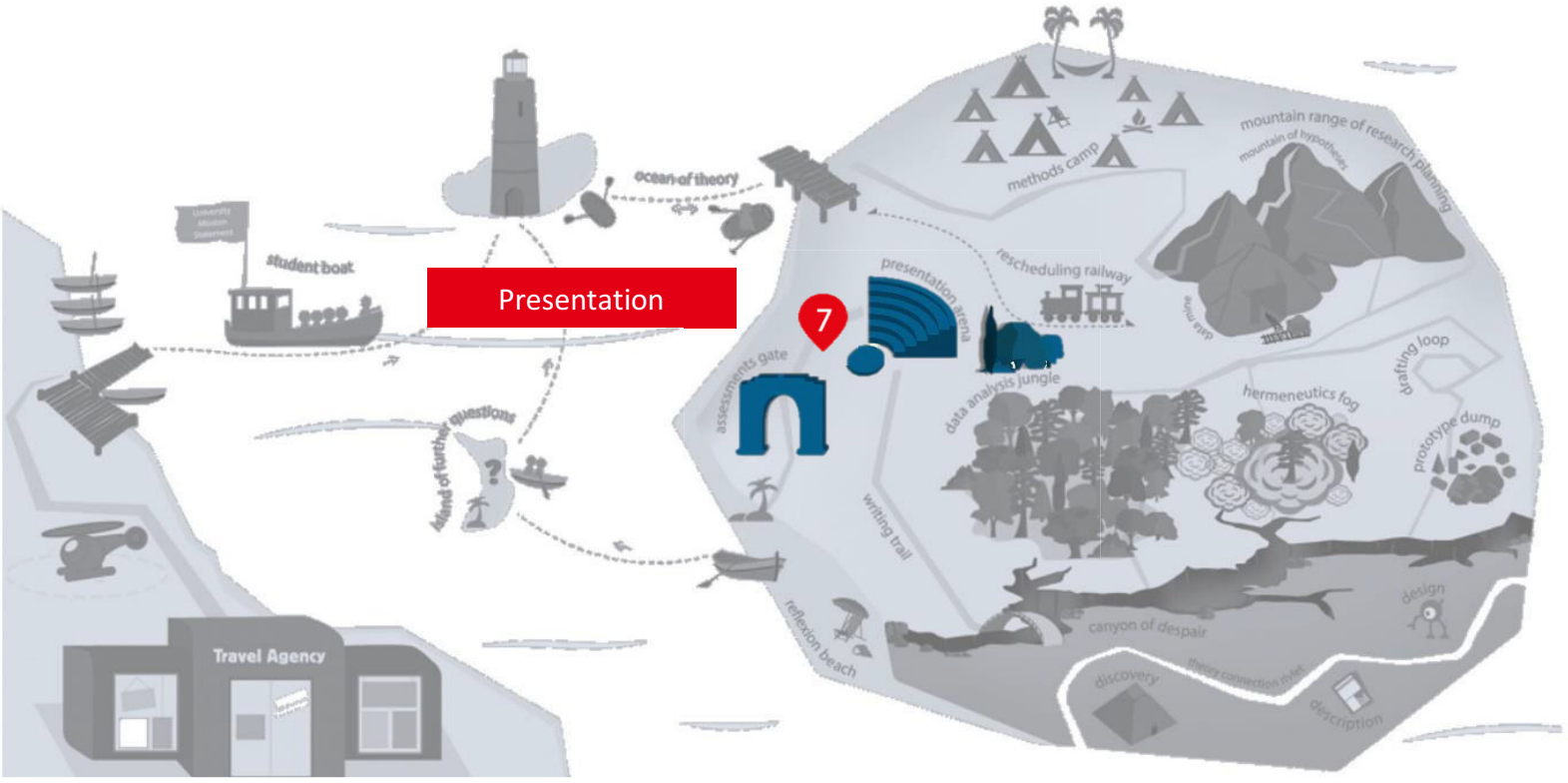
Early stage fright

Vignette #13



KEYWORDS

PRESENTATION, OVERSTRAIN AND UNCERTAINTY

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#13: Early stage fright

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The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Early stage fright

Third week of term. Full of anticipation, you entered the class to proudly announce a conference at the end of the course where students can present their project results. Until the very end, the conference had been on the brink of failure and had cost you a lot of nerves and persuasion. During the event, however, it quickly becomes clear that the students are not so enthusiastic about the offer. One student puts it in a nutshell: "And what if we don't have good results? What if we only embarrass ourselves?"

Keywords: Presentation, overstrain and uncertainty

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Have you discussed with your students what "good results" in the research process are?

What should be achieved or learned from the presentation?

Do you feel that it is part of the process to be uncertain about your own results and do you think it is important for students to have this experience?

If you let the conference take place: Would you do it for your own sake or for that of the students? And if you were to cancel the conference?

Would you like the conference to present only the results in terms of content or also the learning process during the research process?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Make students bear their worries

You believe that failure is a part of the process. Failure is the greatest learning opportunity.

An appropriate action could be: You communicate your attitude to the students: It would also be okay if they do not achieve results worthy of presentation, because they can still learn a lot. In the concrete situation, however, you would make sure that failure is not perceived as a

personal defeat, but rather that it is understood that failure is part of it, could have happened to others, and you would highlight the learning opportunities that have arisen as a result.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Organise a dress rehearsal

Two days before the presentation, you will conduct a dress rehearsal, where all students will have an opportunity to practice their presentation. There will also be another opportunity for feedback.

Benefit of the action: This way the students have the certainty that they are not blindly running into an open knife, but that they are made aware of problems and embarrassments beforehand.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Ensure results

Through close supervision, you ensure that all students can offer something presentable at the end of the course. It does not necessarily have to be what was originally intended - sometimes it can be enough to explain during the presentation why something did not work out.

Benefit of the action: The students certainly have something to present, even if it is not necessarily what they had hoped for. With good guidance, it can nevertheless become the presentable result of a knowledge process..

Options for the presentation

In the following, a number of suggestions are offered to reflect on the possibilities that still exist with regard to the presentation of results.

Audience settings of the presentation

- closed (participants of the event)
- open for interested parties
- obligatory for external parties (e.g. following year)
- extensively advertised
- embedded in university culture
- at external conferences (e.g. student research conference)

Types of presentation

- conference
- poster presentation
- demonstration
- journal publication

Time frame of the presentation

- final meeting
- one-day event, e.g. annual conference
- conference week
- permanent display of posters
- journal publication

Goals of the presentation

- assessment of the own performance
- promoting intrinsic motivation
- taking responsibility for one's own performance
- noticing one's own progress

Tipps and tricks

- conduct a final rehearsal
- “re-polish“ failed projects to the new presentable knowledge goal: why did it not work out?

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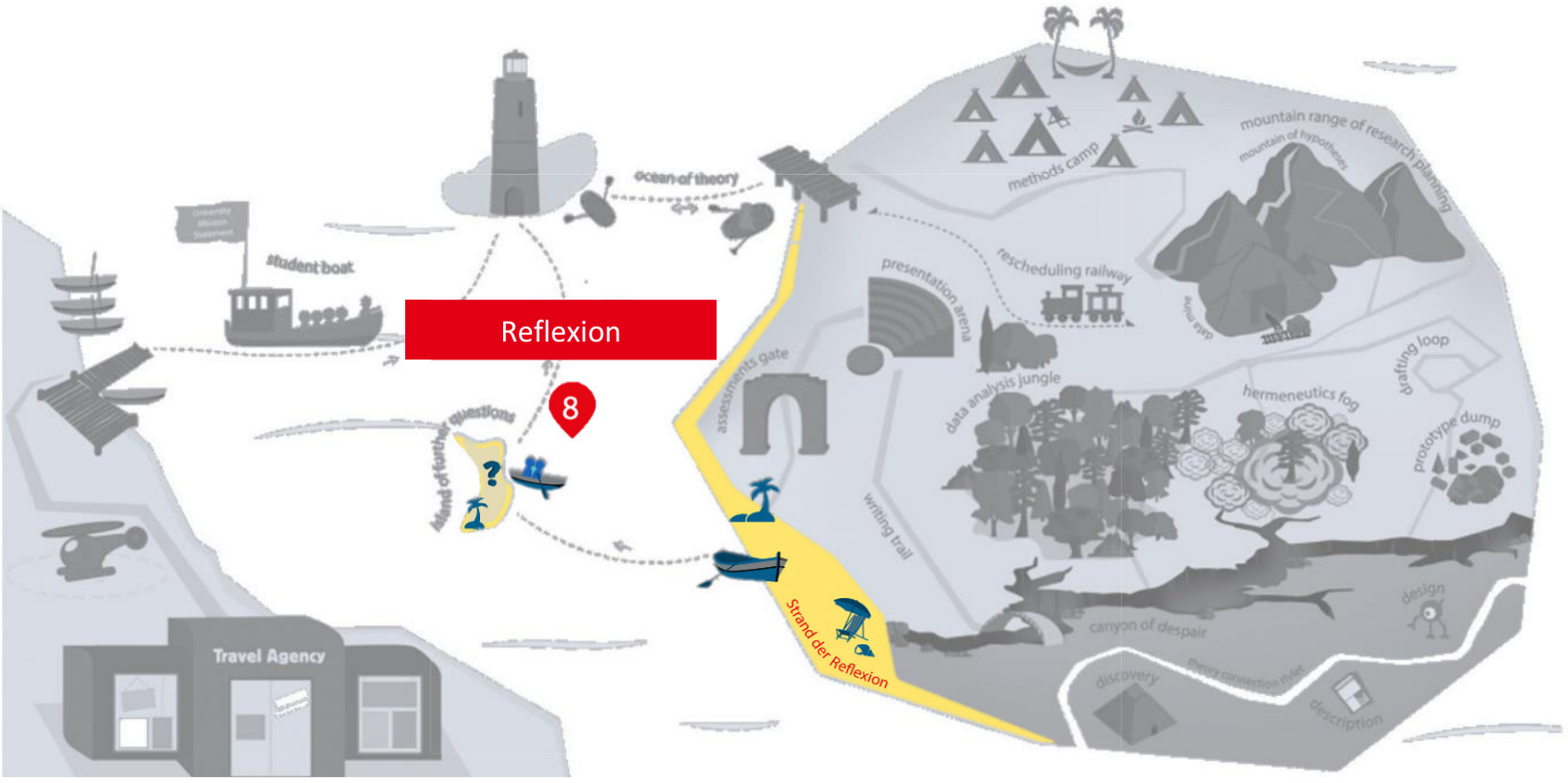
After-Thoughts

Vignette #14



KEYWORDS
LACK OF REFLECTION

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#14: After-Thoughts

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After-Thoughts

New course. Your office hour is attended by participants from the project seminar of your previous semester. The students do not agree with the grade they received on the project report. You yourself remember the grade well - you were shocked by what you read in the report. While the students seemed quite fit in the lecture and had quickly achieved quite good results, it became clear in the project report that they did not understand half of what they had worked on. When grading several project reports, it became clear to you that the students often do not reflect on their own actions.

Keywords: Lack of reflection

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

How could you integrate phases of reflection better into the student research processes?

What kind of support for reflection can you give to students?

What goals do you pursue with the course and do you make these goals explicit in the course?

How do you generally deal with students who are dissatisfied with their grades?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Enabling experiences of failure that are not personal failures

You believe that mistakes are part of it. Students should learn something new from mistakes and develop further. It is important for you that failure does not remain the final result.

This could mean on the action level: You discuss the fact that something can and should go wrong. You encourage a reflective discussion with the students, in which they reflect on what went wrong and how to avoid it next time. It is often particularly effective if the students answer these questions themselves.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Stay close during the process

You keep close contact with the students during the process, for example by convening regular meetings. There you question previous process steps and encourage reflection.

Benefit of this action: A failure as extensive as described in the vignette is not possible with such close supervision.

Encourage students to consider their work scientifically

In conversations you suggest that students deal with what the contents and methods learned have to do with themselves as future academics. On the one hand, they reflect on themselves and their future role. On the other hand, the students experience a critical distance to everyday assumptions and at best recognise ways to deal with content scientifically.

Benefit of this action: The stimulation of reflection during the process prevents the creation of such unreflected work as described.

Set up a “college day“

You set up a "college day." There students are instructed to reflect on their role as students at a university. Topics include the difference between vocational education and scholarly education, between knowledge and education and between science and crafts.

Benefit of this action: Students think about science and its meaning. This can have a positive effect on their scientific activities within the project.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Offer a final discussion

You organise a final discussion at the end of the course. In it you encourage the students to describe their process so far. In the meantime, you can ask critical questions and thus stimulate further reflection.

Benefit of the action: At best, the discussion takes place before the students write their final report. They receive impulses to critically question their own work and, if necessary, to rework it.

Offer blogging as an activity

You can offer students to write a blog about their research. This communication format also indirectly documents what the students have not understood or which questions still need to be clarified. In this way, you as a teacher gain an "objective" insight without having to have many conversations with the students.

Benefit of this action: Through the blog you have the possibility to observe the state of research and possible errors during the process. Thus, you can call for consultation appointments to intervene if necessary.

Have reflection processes guided by student tutors

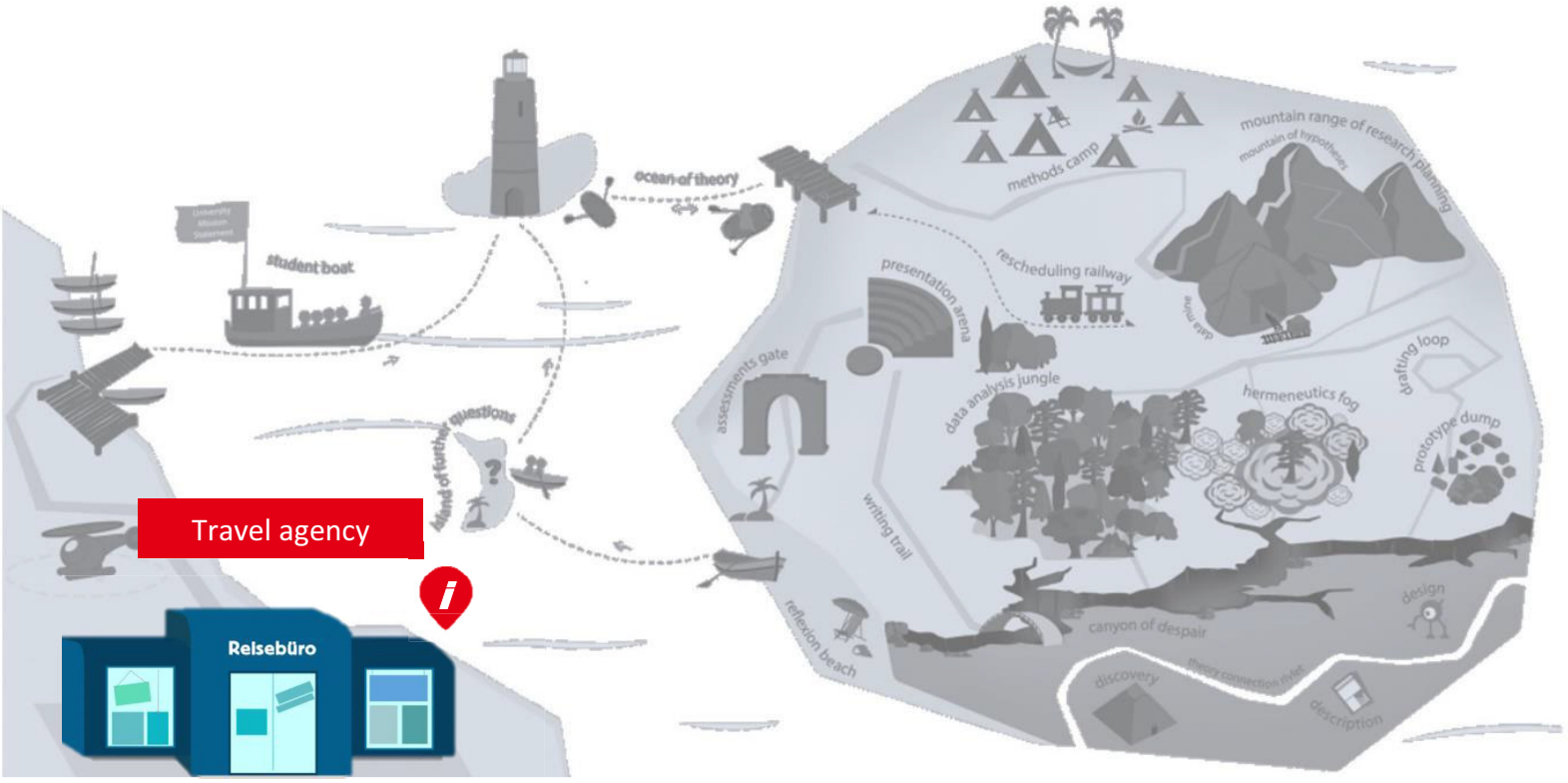
You appoint student tutors who are available as additional contact persons for the students. They also stimulate reflection by asking critical questions in between.

Benefit of this action: Since student tutors study too, the exchange is usually more relaxed and familiar. This allows students to be more open and direct in their questions. In turn, the questions of the tutors are experienced as less threatening, so that impulses from them are less intrusive.

FideS
Forschungsorientierung in der Studieneingangsphase

Scapegoating

Vignette #15



KEYWORDS

TIME AND EFFORT

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Bundesministerium für Bildung und Forschung

Förderkennzeichen: 01PB18013

#15: Scapegoating

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Scapegoating

It's the middle of the term. You'll meet a colleague of yours in the hall. Relatively quickly he comes to the point: "Tell me, what are you doing in the BA3 seminar? Yesterday the students really got on my back when I wanted to give them a "bigger" task. They would have no resources left at all and that I should turn to you if that bothers me," he says somewhat annoyed. "Phew", you are surprised and annoyed at first - but you have to admit that the project eats up a lot of resources, even yours.

Keywords: Time and effort

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Are your requirements and therefore also the ECTS in your course appropriate?

How is your course interlocked with the other courses of the module/programme?

How do you see the role of your colleague in this situation - what responsibilities does he or she have?

How much less "contents" in your course could you live with?

How does the amount of work in your event relate to other events in your department?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Encourage everyone to take responsibility

Research-based learning should not be a matter for individual teachers but should concern everyone at the institute.

An appropriate action could be/This could mean on the action level: You can work politically. Many universities have already included research-based learning as a teaching principle in their mission statements - you can work as a teacher to ensure that this does not remain merely a symbolic act. Especially so that the responsibility for this does not rest solely on your shoulders.

Highlight positive effects of research-based learning

You believe that by increasing the competence of your students, your colleagues can also benefit from the research-based learning on offer.

This could mean on the action level: You engage in a discussion with your colleague in which you take this position.

Critical self-reflection

As a teacher, you take the opportunity of feedback to question once again whether the students' criticism is justified. Do they possibly receive not enough credit points in relation to the workload of your course?

An appropriate action could be/This could mean on the action level: If you come to the conclusion that the ECTS assessment is unfair, you will have to explore options for action. Firstly, the future ECTS assessment can be changed. However, you might also have to consider how to deal with it in the current course - a joint exploration with the participants could be helpful.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Create a broader anchoring

Your offer of research-based learning is anchored in the curriculum, for example by deciding on it as a fixed module.

Benefit of this action: It is generally known and anticipated that this module takes up a corresponding amount of resources among students. This is also reflected in the sample template for the module allocation for the course of studies in a way that there are not many parallel courses. Complaints about overworking do not then have to be accepted.

Adapt the timetable to rest of the course plan

Already in the conception you pay attention to the rest of the term plan, especially to exam phases. Setting milestones can be helpful in process control.

Benefit of this action: Neither teachers nor students are surprised that in certain study phases students suddenly have less time for the research project. This knowledge supports a more consistent awareness of the timetable on both sides.

Stretch over two terms

From experience you have learned that one term-time for a project of research-based learning is very short. Therefore, you have arranged for your course to extend over two terms. It is anchored in the curriculum accordingly and provided with an appropriate number of credit points.

Benefit of this action: There is relatively much time for the project. Therefore, there is more time to let the students find their own way.

Offer as an extracurricular activity

You offer research-based learning not in a curricularly integrated course, but in the form of an extracurricular activity.

Benefit of the action: The explicit extracurricular call for proposals would make it clear that it takes place in the students' leisure time - this also means that they would have no excuses with regard to their curricular obligations. Moreover, only particularly motivated students would participate.

Offer as a compulsory choice

In some universities or courses of study there is the possibility for students to choose minor subjects or elective courses. Students are given a certain number of credit points outside their own subject, which they can have credited to their study program. An offer of research-based learning could be located in this elective area.

Benefit of this action: The projects can be credited with an appropriate amount of ECTS points and can be included in the course of study by means of compulsory elective credits.

Enable term of learning space

As a means of profile development, some universities allow students a term with a flexible learning space. Students can enroll for this term and do not have to earn (additional) credit points during this time. If students receive BAföG, they must prove that they have 16 credit points per semester - this can also be achieved with a project of research-based learning if it is sufficiently extensive.

Benefit of this action: The offer of research-based learning would have no curricular competition; the students could concentrate entirely on the project - but would have to be prepared to invest an extra term for this.

Explain why such research-based learning opportunities are needed

In the discussion, you emphasise the relevance of research-based learning for increasing competence and the students' attitude towards studies and science.

Benefit of this action: You may win the approval of your college and pave the way for structural changes.

Fair credit point remuneration

Students will receive an appropriate amount of credit points for their workload on the project. Research-based learning often requires more work than is initially assumed, so it is better to plan generously.

Benefit of this action: The students cannot claim that they are too busy because the term planning is arranged differently so that there is not too much work done in one term.

Note: If it is not possible to award more credit points, make it clear at the beginning of the semester that the credit points cannot cover the workload.

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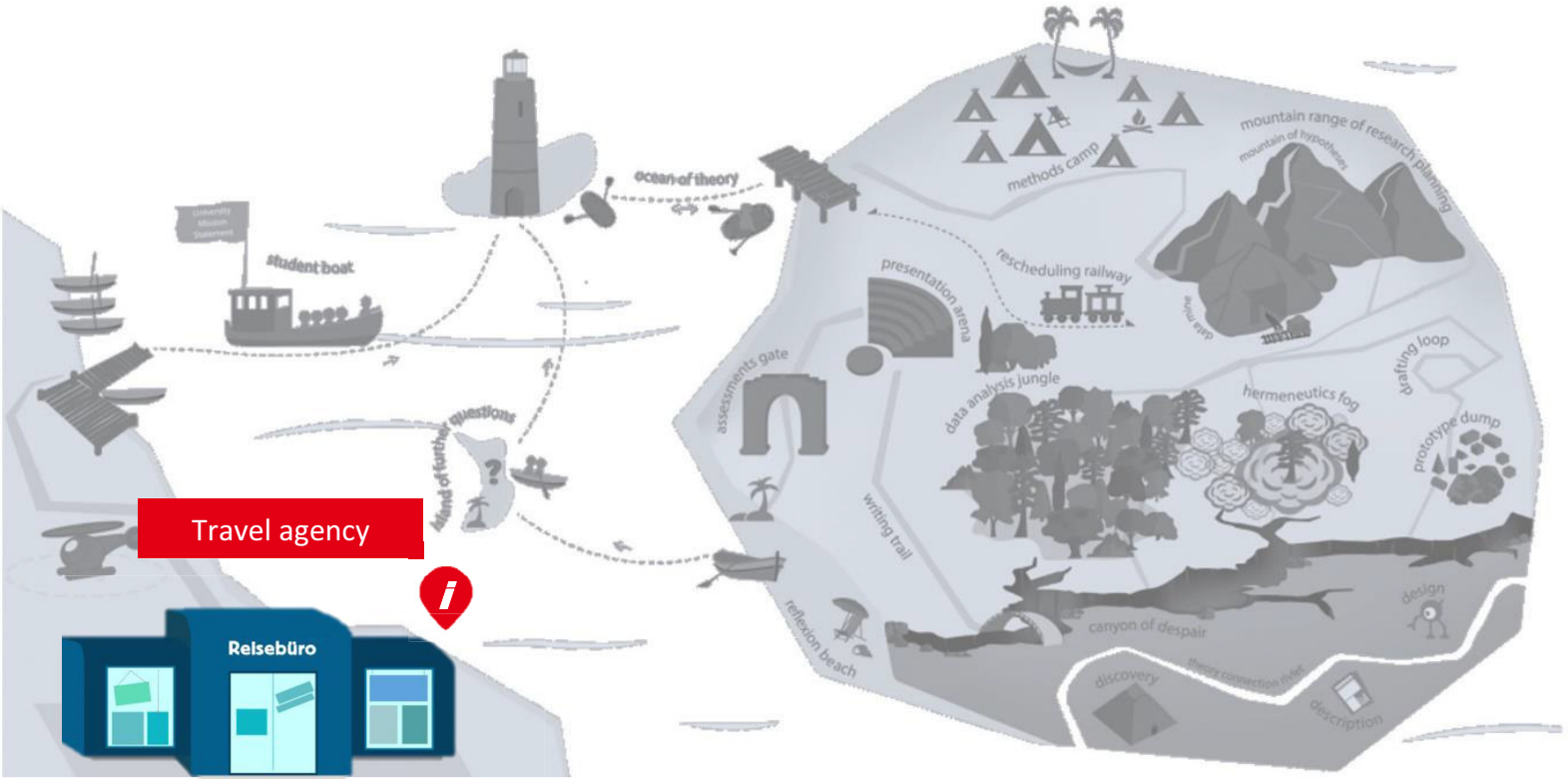
Forschungsorientierung in der Studieneingangsphase

The good must be put in the dish,...

Vignette #16



KEYWORDS
FINANCING, INSTITUTIONAL SUPPORT

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#16: The good must be put in the dish,...

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

The good must be put in the dish, ...

The week before last before the start of the semester. After your offer was launched last year and still needed a lot of publicity due to its low profile, you are now sitting in front of a mountain of applications with which teachers apply for resources for their research-based learning projects. The quality of the applications varies, but everything sounds exciting and worth supporting. Unfortunately, with the best will in the world, you cannot accept all the applications; there is a lack of personnel and, above all, financial resources. It is with a heavy heart that you start the selection process, but you are at a loss as to what criteria should decide on funding.

Keywords: Financing, institutional support

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

What criteria would you like to use for the selection?

Who could help you with the assessment or selection?

What minimum standards and planning specifications do you apply for the evaluation?

For future calls for proposals, would you like to raise or lower the hurdle for applicants to submit an application? Why?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Tips & pitfalls:

Beware of exploiting students

Check the applications carefully to see whether they are really about research-based learning for students - and whether the focus is on the students, or whether lectures are using the opportunity to pass on their own tedious work to students.

Watch out for submissions from disciplines rarely involved

In order to promote diversity, attempts are often made to give precedence to these submissions. It has proven to be a good idea to pay attention to the quality of the application. What is the benefit of a bad project from a rare study programme?

Create an online overview

An online overview of the projects can be created via an input mask. Different properties of the projects can be easily compared. Required informations are for example: responsible persons, number of participants, departments, research field, goal, but also costs, etc. This also makes information gaps clear.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Have a project outline written

You can request a four- to five-page project outline in which the plans are described in detail. It must include both evaluation plans and a statement on how sustainability can be ensured.

Benefit of the action: You have a very detailed insight into the projects and can therefore include more factors in your decision.

Have the application submitted via the Dean of Studies

Applicants may not submit their applications themselves, but must present them to their deans of dtudies for forwarding.

Benefit of the action: This hurdle already sorts out the worst applications - - on the one hand, because the applicants are inhibited from submitting bad applications to the deans of studies and, on the other hand, because the deans of studies can already have a selective influence themselves.

Enable application via online form

An online form can also be provided for an easy application. This also allows certain aspects of the project concept to be controlled via fields and selection of points. Thus, applicants reflect on future challenges and criteria to be considered already during the preparation process.

Benefit of the action: The applications can be easily compared, they are compact, can be called up anywhere and are easier to send. In addition, the contents and elements can be influenced.

Demand credit point recognition in advance

Applicants must already have sorted out in which module their project will be credited when submitting their application, so that students will certainly receive credit points for it.

Benefit of the action: This procedure has several advantages: On the one hand, only very motivated applicants apply, so it has a selection function. In addition, credit point recognition has a motivating effect and can reduce the dropout rate from projects. Finally, it has organisational advantages if the bureaucracy is clarified before the project starts.

Organise early pre-submission

As early as two months before the application deadline, you require applicants to undergo counselling. They will receive tips on how to write their application and a checklist. After that, a pre-submission is requested, which is then discussed again.

Benefit of the action: Again, the selection function is used. In addition, the research project can already be sharpened in this process and thus research time can be used differently during the project period. At the same time, the applicants learn how to write applications. Disadvantage: The procedure is extremely time-consuming and laborius.

Organise competitive tendering

You organise an interdisciplinary commission which decides on the quality of the applications in a competitive manner. The projects of the worst applications will not be carried out. You can also organise a workshop for applicants beforehand, which will improve the applications and is already a first hurdle that can only be overcome through motivation.

Benefit of the action: Decision-making responsibility rests on several shoulders. In addition, members of the applying discipline can better judge the quality and realistic scope of the research projects than a single person.

Conduct a project hearing in front of a committee that writes recommendations for the rectorate

You can have a committee of several experts and students formed, who first evaluate the projects by means of applications and then in a hearing of the project applicants. This committee can write an assessment of the projects. The final decision on the selection is ultimately made by the rectorate based on these recommendations.

Benefit of the action: The inclusion of different experts and also the student perspective allows a very thorough assessment of the project and spreads the responsibility on many shoulders. The final decision by the rectorate gives the project application additional emphasis, so that only the most motivated students will apply.

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact..

Lecturers submit student proposals

Often there is no provision for students to apply for a project themselves. You can organize that students still get the opportunity to formulate their own interests and research projects. If teachers can be found to supervise them, these projects are carried out.

Benefit of the action: Student participation can be a decision criterion for funding projects.

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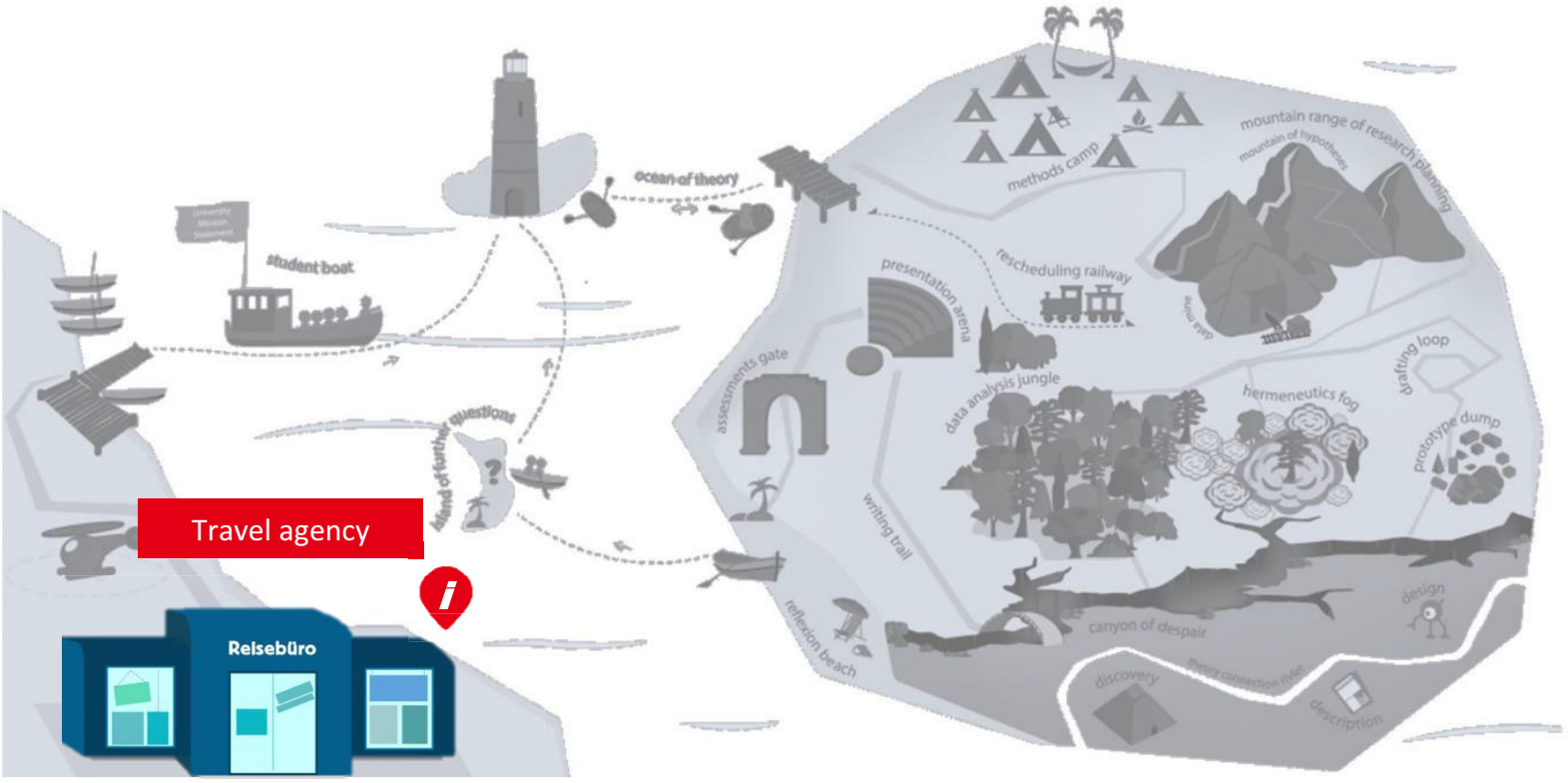
Forschungsorientierung in der Studieneingangsphase

For institutional solutions!

Vignette #17



KEYWORDS

INTEGRATION IN THE STUDY PROGRAMME, RESISTANCE TOWARDS CHANGES

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#17: For institutional solutions!

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The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

For institutional solutions!

Reaccreditation interviews of your study programme are pending. Together with two colleagues, you have decided to fight for change. You want to ensure that research-based learning becomes an integral part at your university. Unfortunately, you and your colleagues are not yet in agreement on where and how it should be implemented in the most sensible way. In a moment you will meet again to prepare for the final reaccreditation talks.

Keywords: Integration in the study programme, resistance towards changes

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

Should the course be curricular or extracurricular?

Should the course extend over one or more terms?

Are you considering an interdisciplinary, transdisciplinary or international approach?

Should / can student assistants be integrated?

Should the course end with a (graded) examination?

Which additional courses would you like to try to initiate in connection with this one?

Examples

In the following - in contrast to other case vignettes from this series - examples of implementation forms at other universities are presented.

Fundamentals

Which questions should be fundamentally clarified before second or third steps are taken to embed research-based learning structurally in the institution?

Sharpen the concept of research-based learning

When discussing the curricular integration of research-based learning, confusion often arises as to what research-based learning actually is. Before the embedding of research-based learning can be discussed, there should first be a discussion about how the term is used. This can be supported by distinguishing between research-based learning, research-oriented learning. Only when a common definition for the term research-based learning is available, at best with a clear catalogue of criteria, can the discussion be fruitfully conducted.

Involve several teachers

For a sustainable embedding it may be useful to establish a framework project under which the courses on research-based learning are conducted and in which the coordination of these courses is organised. Within this context, students from different faculties can then carry out research-based learning. In order not to create a "one-day wonderland", it makes sense that many teachers are involved in the project so that

fluctuation can be absorbed. In addition, the offer remains present with the students, as they are made aware of it by different teachers. In addition, in follow-up seminars the teachers can refer to the experiences of the participants again and again if there are points of contact in terms of content. This requires transparent communication with as many teachers as possible.

Award credit points

Courses of research-based learning require a high level of commitment and effort from students. Appropriate remuneration with credit points can help students to get through even deep phases and to carry the project through to completion. (At the same time, there are also many extracurricular offers of research-based learning that do not award credit points - this would therefore also be conceivable).

Standardised credit point distribution

If research-based learning is carried out in an interdisciplinary way, it should be ensured that all participants receive the same amount of credit points for their participation. Differences in recognition lead to destructive group dynamics.

Organisational details

This section describes aspects of organising the integration of research-based learning.

Establish a central contact point for FL projects

A central contact point for offers of research-based learning can be established, e. g. in centers for teaching and learning. This ensures that teachers who wish to initiate a project of research-based learning take into account in which subject area and module it will be carried out and with how many credit points it will be rewarded. This can also pave the way for a structural implementation.

Establish calls for proposals for lecturers

You can also establish research-based learning as a central offer that is equipped with additional funding. You can advertise these funds for lecturers who want to carry out their teaching in the learning format of research-based learning.

Use student assistants

The implementation of a research-based learning programme requires quite a lot of manpower. One possibility could be that student assistants, who are further advanced in their studies, could be used as tutors to accompany the students in the research process. These tutoring sessions can either accompany or deepen the research process, for example in the form of method tutorials.

Time management

This section discusses aspects relating to the timing of research-based learning offerings.

Extend the offer over several terms

Instead of conducting research-based learning in one term, you can also extend it over several terms. This gives the students more time, makes it easier to set intermediate goals and allows them to benefit from their further study activities and seminars that run parallel to the research-based learning project.

Focus an entire term solely on research-based learning

At a university, the entire first term (30 credit points) is dedicated to research-based learning across all disciplines. In addition to their own research, students also attend interdisciplinary modules, for example on the responsibility of science. At the end of the term there is a conference week, after which papers and examinations are written.

Enable a flexible learning term

Instead of integrating research-based learning into existing modules, the university can also enable flexible learning terms. Students can register for these and thus receive additional time to study freely. During this time, they can, for example, carry out extracurricular offers of research-based learning, which can, however, be remunerated with credit points in order to enable participation by BAföG students, for example.

Start a four-year Bachelor

Instead of completing the Bachelor's degree in three years, it can also be planned as a four-year Bachelor's degree. This gives students more time for socialization in the university institution, for professional and personal development.

Conduct research-based learning in the third term

It may be advisable to place offers of research-based learning not quite at the beginning of the course, but also not too late in the studies. Some universities recommend the third term, as students have already learned the basics of research by this time and therefore do not start from scratch. However, they still have enough time to use what they have learned in research-based learning in their subsequent studies.

Conduct research-based learning in the fifth or sixth term

Other universities have anchored research-based learning in the fifth or sixth term. The proximity to the final thesis can have a stimulating effect here.

Carry out opportunities for research-based learning in each term

It can be advantageous to have research-based learning programmes started twice a year. For example, the cohort will be divided and there will be fewer participants at once.

Framework

This section discusses possible aspects of the framework conditions for research-based learning offerings.

Encourage internationality

Through cooperation with other (international) universities, students can experience how research on similar or the same topics is carried out in other countries. It may even be possible to conduct comparative studies together.

Encourage interdisciplinarity

You can design your offer of research-based learning as an interdisciplinary course, for example as an elective module that can be taken by students from different faculties.

Match modules to each other

You can also coordinate the offer of research-based learning with other modules - so that, for example, a method module is conducted beforehand as preparation.

Offer research-based learning as an additional and/or substitute offer

Instead of making research-based learning compulsory for all students, it can be used as an additional or substitute offer for particularly strong or particularly interested students who are underchallenged in everyday seminar life.

Offer research-based learning as an extracurricular offer

In order to avoid discussions about what should be transformed into research-based learning in the module plan - and thus possibly "missed out" - research-based learning can also be carried out as extracurricular activities. In order to be able to guarantee the organisation and implementation, however, personnel resources are needed - consequently the support of the implementing institution.

Integrate research-based learning as a compulsory optional module

In some universities, a module of research-based learning is offered as an optional compulsory module. This allows students to have their credit points credited, while at the same time the number of participants is more manageable and students are more motivated.

Have group work carried out over one term only

Even if the project of research-based learning extends over two terms, this does not necessarily mean that the students have to work together in a group over two terms. One university reports that they only carry out the group work in the second term in order to minimise the effects of interpersonal conflicts and external influences on the research process.

Bonus offers

This section describes offers that can be stimulated in connection with research-based learning, but which are usually already an enrichment in themselves.

Integrate a lecture series

Parallel to the offer of research-based learning, you can organize a lecture series oriented to the research topics. This gives students the opportunity to receive theoretical input in the process and to make cross connections. They experience that theory and research practice complement each other and recognise the benefits of lectures for their studies. This lecture series could also be interdisciplinary. In this way,

students gain an insight into different forms of research practice - and initial suggestions as to how they can proceed as researchers themselves.

Set up a college day as a reflective event

In one university, once a year a whole day is dedicated to reflection on the study. The students are instructed to reflect on their experiences in their studies as well as the meaning and purpose of their own studies. In addition, there is a content-related discussion about what education at a university means, also in contrast to education.

Organise a conference week at the end of the term

After the completion of the offer of research-based learning, you will organise a conference week to which guests from the scientifically relevant environment will also be invited. There the students present their research results.

Organise service learning

Offers of research-based learning can also be designed as service learning. This means that students do research for partners in practice, i.e. student research is dedicated to current questions and challenges in practice. For this purpose, cooperation agreements with partners in practice must be concluded. One advantage of this format is that students are and remain highly motivated. Firstly, they experience that their research is not "for the drawer", and secondly, they experience the relevance of research for practice.

Encourage students to prepare written papers during the term

As an examination for research-based learning a term paper can be done. Particularly at the beginning of their studies, students are still overwhelmed with assignments or postpone them until the term break, so that the assignment is written separately from the term events. Instead, you can - for example, by requesting an exposé - encourage students to deal with their future exam performance during the term and thus to successively reflect on the ongoing process.

Encourage a portfolio review during the term

Instead of an examination at the end of the term, you can have the students accumulate contributions for their examination performance during the term. Contributions can be, for example, minutes, session chairs or oral performance. Because there are so many different types of contributions in the end, the individual

contributions become less and less important and the students act more freely and naturally - without losing focus on research.

Set a hypothetical research proposal as a goal

Instead of a complete research cycle, students can also "only" prepare a hypothetical research proposal. To do this, students must first examine the potential research topic, explore the state of research, develop a research question and select a suitable method. In this way, they already gain a deep insight into essential steps of a research process without having to bear the time expenditure of the entire research. In addition, students are familiarised with the modalities for applying for funding and can develop an understanding of how research work is organised and financed in third-party funded projects.

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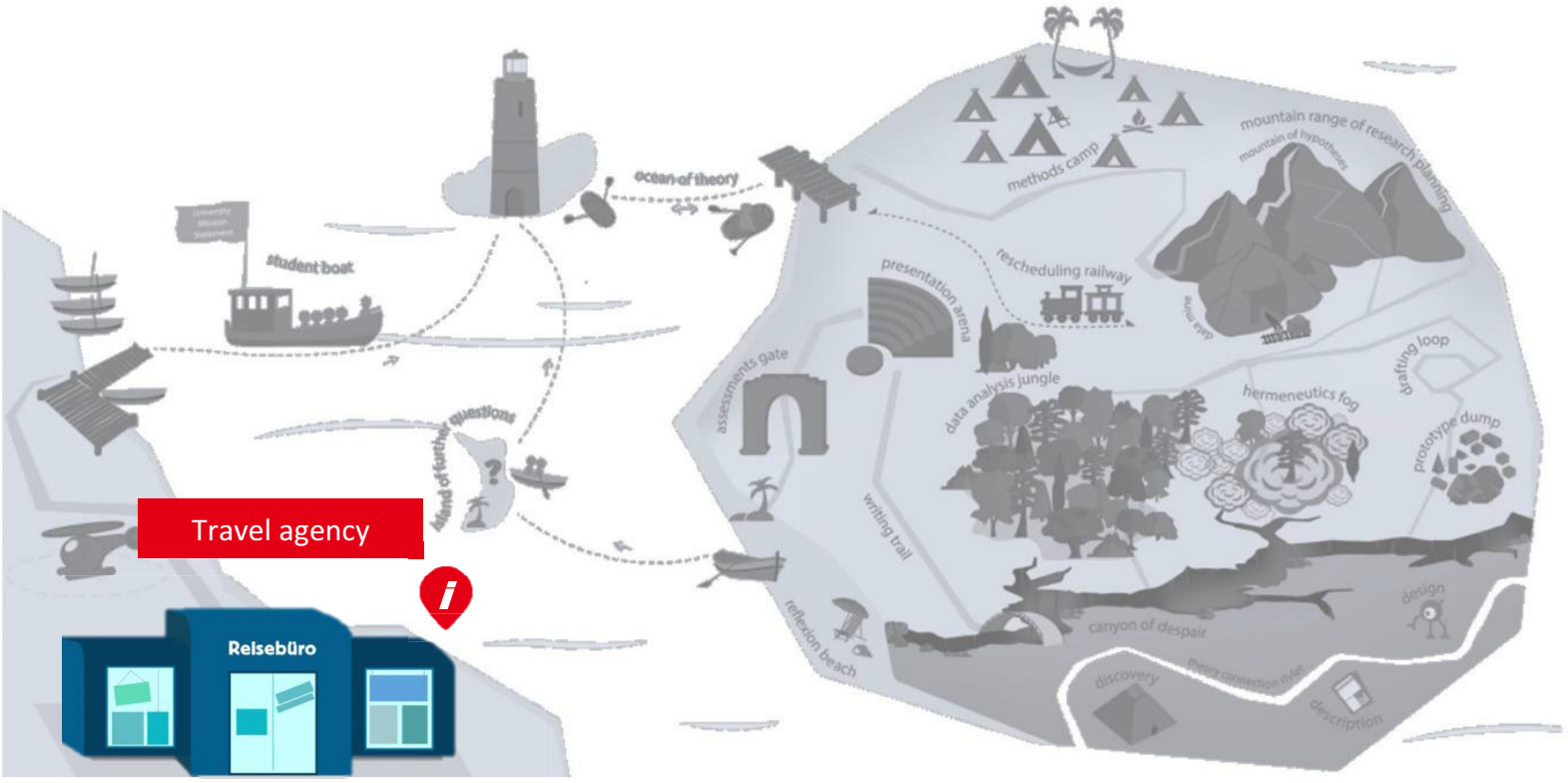
Initial difficulties

Vignette #18



KEYWORDS
ACQUISITION OF PARTICIPANTS

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#18: Initial difficulties

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Initial difficulties

Start of the term. It was clear to you last term that there would be a shortage of participants in the first round of the project. But even this term, the number of registrations for your course in research-based learning is still very low. A little bit resigned and contemplative, you are now on your way home. You consider how you could promote the establishment of the course and make it more attractive for students.

Keywords: Acquisition of participants

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

What could be the reason for the low number of registrations?

Which advertising channels can you think of at your university?

Could the graduates of last term be used for advertising purposes?

Are your course descriptions and performance requirements attractive to students?

To what extent are you supported by your university/department in the implementation?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Attitudes

Attitudes do not include concrete measures but describe the inner attitude of teachers (or coordinators) towards different situations. Depending on the attitude, situations can be interpreted as "problematic" and "challenging", but also as "desirable" and "normal".

Take your time

Stay relaxed. Other projects also describe that it first took time before they were accepted as part of the institution.

This could mean on the action level: Continue as before and show presence.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Let students decide on their research topics

In advertising the programme you emphasise that you give students the opportunity to formulate their own interests and then to pursue research-based learning within the framework of the programme.

Benefit of this action: The students are more intrinsically motivated.

Advertise about people

You contact the individual institutes and subject advisors beforehand and inform them about your offer.

Benefit of the action: The people contacted can act as multipliers who will put you in touch with students. In this way you can indirectly reach students who are considered particularly suitable by the multipliers.

Anchoring the project via teachers into the curriculum

In order to establish truly sustainable research-based learning, a top-down approach would make sense as well: teachers are encouraged to implement research-based learning.

Benefit of the action: Research-based learning is integrated into the curriculum by increasingly implementing it in teaching. This means that the question of recruiting participants no longer arises.

Appear in the course catalogue

You can also note your programme in the course catalogue.

Benefit of the action: All students come across your offer when planning their studies.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Use conventional advertising measures

You set up your own website, as well as flyers and posters, which are hung up before and at the beginning of the term.

Benefit of the action: The students are confronted with your programme in their everyday life - in situations in which they may already be travelling in groups or otherwise have the opportunity to exchange ideas with potential research partners.

Use social networks as advertising channels

A lot can also be advertised digitally: Social networks like Facebook and StudIP are additional dissemination channels.

Benefit of the action: The students become aware of your programme.

Offer connections with final theses

You can also offer colleagues who supervise final papers to prepare or carry them out as part of your project; or you can take over the supervision of theses yourself.

Benefit of the action: Teachers are relieved in their supervision and you have a safe audience.

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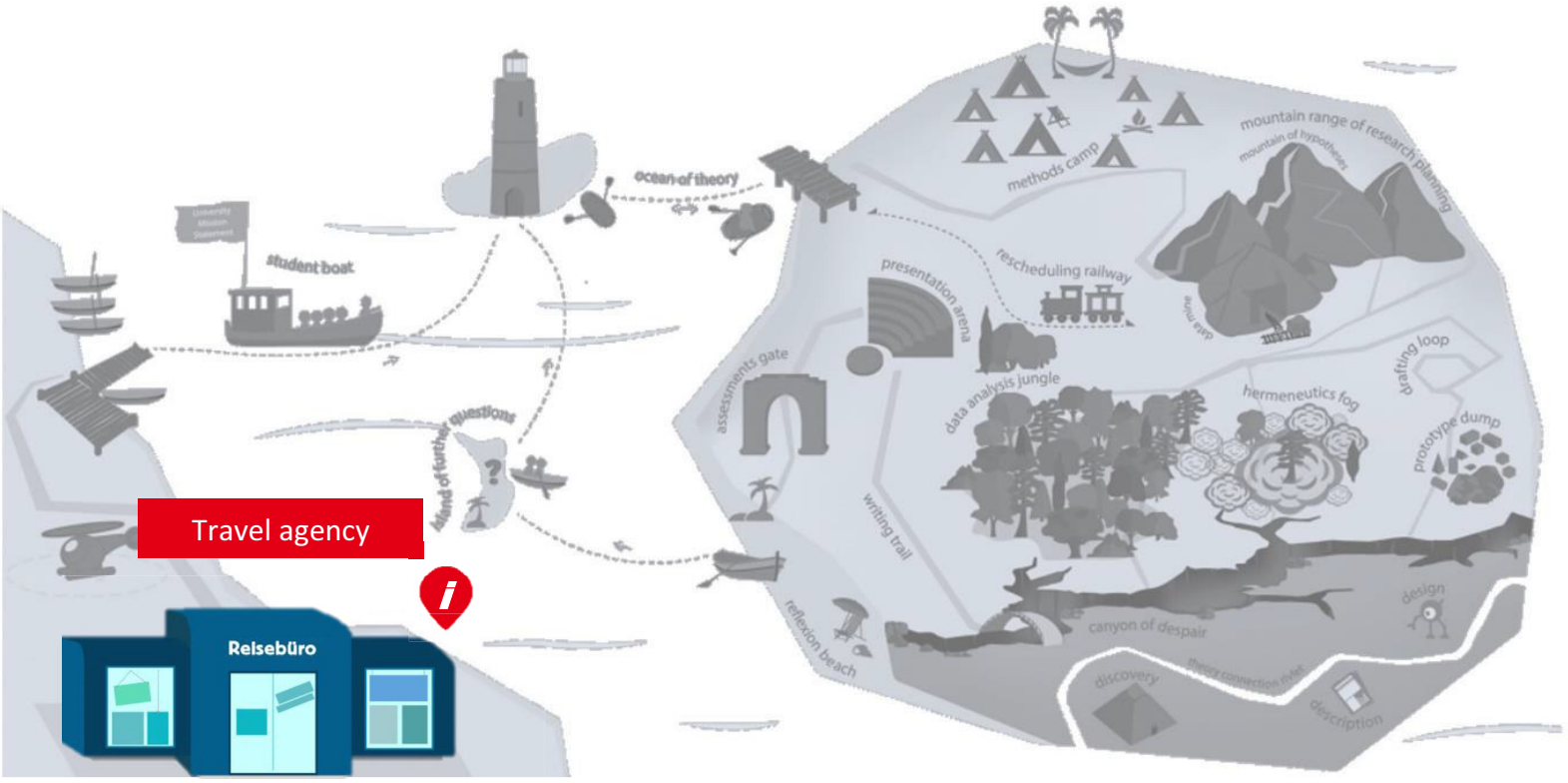
Evaluation

Vignette #19



KEYWORDS
EVALUATION

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#19: Evaluation

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

The situations described are taken from interview data with coordinators of research-based learning projects and have been sharpened for the purpose mentioned above. The most common challenges in teaching courses to promote research-based learning have been selected and converted into vignettes.

Evaluation

You did it. You have prevailed against all opposition and now finally got the green light: you are allowed to conduct a course in the format of research-based learning. However, you got the message that it will only be continued if the evaluations turn out well. When you look at the standard evaluation forms, you immediately realise that they do not cover what your desired format is. You consider how you could evaluate your course in a different way and which components an evaluation needs in order to adequately capture the results.

Keywords: Evaluation

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

What do you want to find out with your evaluation?

What components does an evaluation need to capture your course?

Which evaluation methods do you already know and which of them could be used for research-based learning?

Are there colleagues who can support you in your evaluation or give you advice?

Fundamentals

The next section will first address fundamental issues.

Develop an own evaluation concept

Many research projects are too heterogeneous, even at the same department, to be represented by a uniform evaluation concept. It may therefore be worthwhile to develop your own concept - possibly in consultation with your evaluation office and your colleagues.

Make use of existing instruments

There may already be evaluation sheets at the faculty that contain at least some components related to research-based learning. If necessary, ask the evaluation office at your university. You will also find further suggestions on the "Island of Research".

Cooperate with researchers that investigate the impact of RBL

For example, contact the „AG Forschendes Lernen" of the DGHD. Some of their members have worked on the evaluation of research-based learning Specialist societies such as the DGHD (Deutsche Gesellschaft für Hochschuldidaktik, German Society for University Didactics) or the DGEval (Deutsche Gesellschaft für Evaluation, German Society for Evaluation) bring together expertise from various research projects on the topic of research-based learning.

Conduct an online evaluation

Use digital tools for evaluation or contact your evaluation office. This makes it easier, for example, to carry out a post-evaluation after a longer period of time. Furthermore, information in free text fields is easier to read.

Use customized EvaSys sheets

Talk to your evaluation office. If, for example, EvaSys is used at your university, you can probably have the questions adapted.

Framework of the evaluation

This section discusses possible aspects of the evaluation framework.

Conduct a pre- and post-evaluation

Evaluate at two points in time in order to be able to follow the development of your project more closely. Students could, for example, indicate their initial level of knowledge and competence in terms of research ability and then the change (they themselves observed).

Conduct a post-evaluation after 2 years

You design a questionnaire that will only be used two years after the end of the course. This allows the project to be evaluated against the background of the further course of the study.

Integrate into graduate survey

It may be possible for you to have some questions about the project and the relevance of research experienced with it integrated into the graduate survey, which will provide information about how your research project is seen in the context of the course of studies.

Organise the evaluation as a dissertation

In some cases, relevant evaluations have been developed as part of a PhD thesis.

Gathering informal feedback

Ask the students or the tutors regularly so that you can get feedback in between. You will also encourage students to reflect.

Possible content of the evaluation tool

Different possible topics of an evaluation tool are presented below.

Research relation

Was the research connection clearly visible? Which research skills could be improved? Which phases of a research process were completed independently?

Key Competences

How do students assess the growth or acquisition of key competences (such as presenting, moderating, but also specific research competences)?

Motivation

With what motivation did students take part in the project? Has the motivation with regard to further course of study changed through the participation? You can, for example, also find out the basic motivation for the studies.

Knowledge

Was there any prior knowledge? Was new knowledge built up? Could the contents be connected with existing knowledge or with the previous studies?

Scientific argumentation skills

Were there different opinions or conflicts? Did one's own point of view have to be defended?

Structure of the course

Was the structure of the course understandable and helpful for the students?

Satisfaction

How satisfied were students with the course?

Free text fields

The information in the free text fields can contain very valuable feedback - for example, topics that were not even considered in the evaluation concept.

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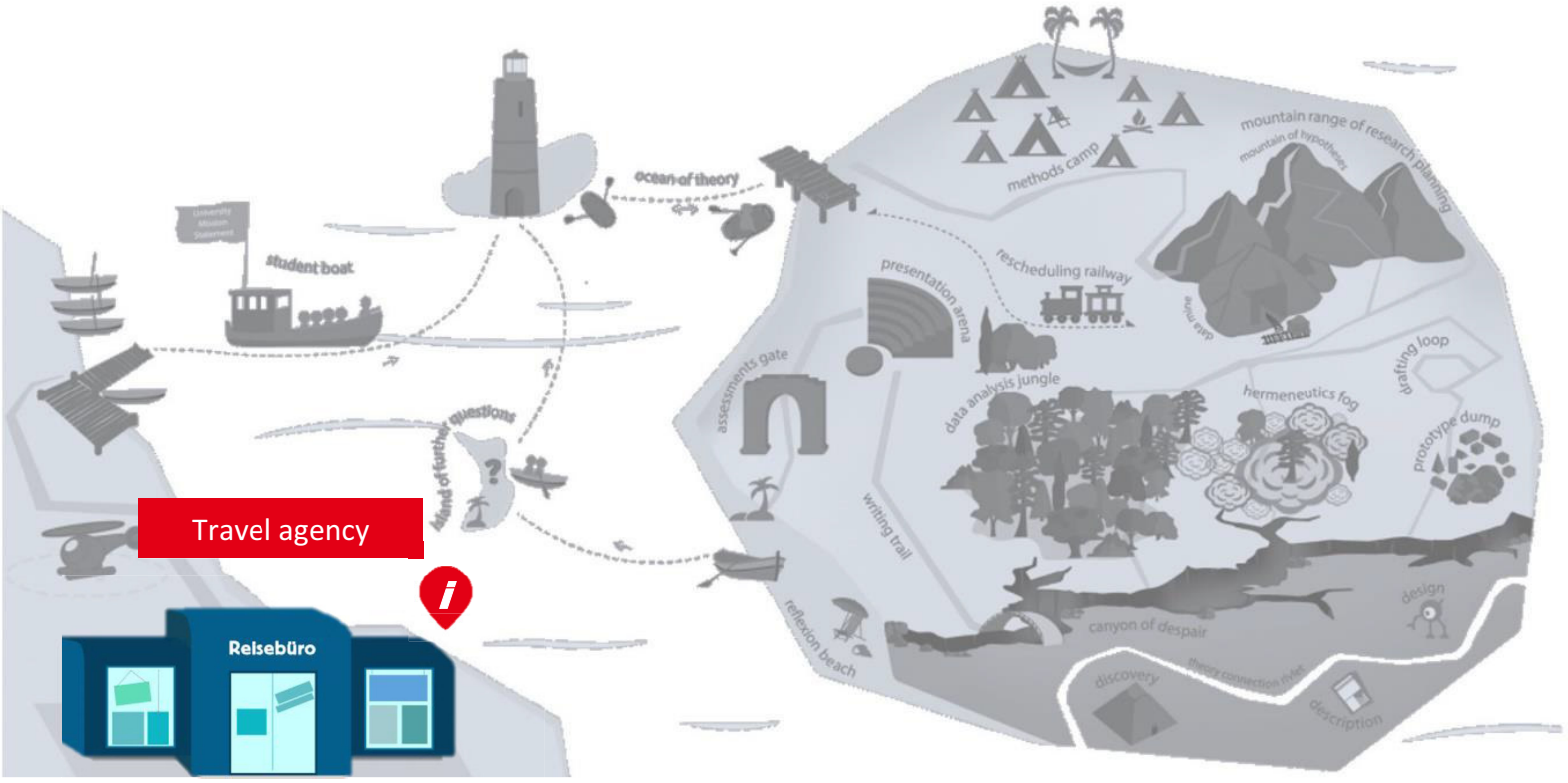
Support brings work

Vignette #20



KEYWORDS
SUPERVISING ASSISTANCE

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#20: Support brings work

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Support brings work

After a busy start in the last term the head of the institute has now agreed to offer four small positions for student tutors. The advertisement was successful, there were quite a lot of applications and you had the impression that you had chosen the most suitable ones. However, in the first small team preliminary meeting it became clear that the expectations of the job are as far apart as the competences of the future student tutors. You now have one week to prepare the team for their task. Now all you have to do is think: how?

Keywords: Supervising assistance

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

What were the requirements for the student tutors when applying?

For which tasks do you expect support from student tutors?

What skills do your student tutors need to have?

What expectations could student tutors have?

Who can support you in the training of student tutors? Are there perhaps online trainings?

Attitudes and actions

In the following, attitudes as well as preventive and intervening actions in the situation described are presented. First of all, attitudes are described which have an impact on whether and how to react. Then actions are presented. They are practical examples of how teachers at universities deal with the situation in a preventive or intervening manner. In addition, indirect measures are listed which involve a more subtle approach yet may have a strong impact.

Preventive actions

Preventive actions prevent the situation described or rather makes them less likely. There is - of course - no guarantee of avoiding such conflicts.

Request a letter of motivation

You demand a letter of motivation from the applicants in which they should explain their skills and abilities as well as their expectations of the job.

Benefit of the action: An insight into the ideas of the student tutor clarifies the need for preparation or sorts them out if necessary.

Students of teacher education as student tutors

You explicitly address students of teacher education in your advertisement for the student tutor positions.

Benefit of the action: Students of teacher education acquire - at least in part - already during their studies skills that are required for tutorial supervision. In addition, they have an increased

motivation to try out these skills, as the situations in tutoring are similar to those in their career choice.

Intervening actions

Interventions are usually carried out "when the milk has already been spilled". These are therefore acute reactive measures:

Conduct a qualification workshop

You set a date for the training of the future student tutors. Possible topics are: research-based learning, didactic methods, dealing with difficult people, moderating a discussion process, securing work results, role changes in groups, observations and guidelines for the semester.

Benefit of the action: You can prepare the student tutors specifically for their tasks and achieve a comparable level. In this way, you can help to ensure that the tutorials have a common quality standard in good time before the start of the term.

Highlight research-based learning

In the student tutor training, but also already in the call for applications, you address the specifics of research-based learning and what consequences this has for the practical work in the tutoring sessions.

Benefit of the action: If you emphasise the competences needed in the context of research-based learning, skill requirements but also opportunities become clear from the beginning.

Use external trainers

You engage external trainers to qualify the student tutors. "External" means that you do not carry out the qualification yourself. You can hire "external" coaches for this purpose, but it would also be conceivable to ask the center of teaching and learning at your university to carry out the training.

Benefit of the action: You are confident that trained specialists will take over the further training of the student tutors. In addition, you will have free resources for other things.

Using e-student tutors

Instead of using tutors in presence lessons, you can also use "e-tutors". These have specific areas of responsibility which they can carry out online, for example proofreading or the student tutors are available online for specific questions.

Benefit of the action: All processes between the students and the e-tutors are documented and you can make adjustments directly in the process. At least at the beginning of the project, the transparency gives you security. In addition, the e-tutors can also reassure themselves at a low threshold with questions based on concrete examples.

Participate in a tutor-led session yourself

If necessary, you will sit in on a session and, if necessary, conduct a pre- and post-tutorial discussion with the student tutor.

Benefit of the action: By attending the session led by the tutor, you will be able to see how things are going and, if necessary, provide support with specific questions during the follow-up discussion

Indirect (accompanying) actions

In addition, indirect measures are listed which involve a more subtle approach yet may have the same impact.

Conduct regular meetings with student tutors

You set up a jour fix with the student tutors, for example once a month.

Benefit of the action: The date can be used for an exchange among each other and with you as well as for further training (in small workshops) if necessary. In addition, you will gain insight into the current problems or where the student tutors need support from you.

Evaluate the student tutor training

You stay close to the student tutors and regularly ask them if there is anything missing for their job that they would like to learn in a further training.

Benefit of the action: On the one hand, you are relieved by the knowledge that you can still "deliver later" if necessary. On the other hand, you will learn about the actual needs of the student tutors.

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Forschungsorientierung in der Studieneingangsphase

#digitalRBL?!

Vignette #21

Complete research cycle

KEYWORDS
DIGITALISATION

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#21: #RBL_digital?!

Research-based learning in times of (physical distance and) digitalisation - Strategies for research-based learning online

The following text sequence or vignette describes a situation in the context of a teaching that aims at research-based learning. The situation described challenges you as a teacher and may require you to act directly. The aim of the vignette is to allow you to think about what you are doing in such a situation or how you could prevent it. But you may also consider the situation to be problem-free and more conducive to learning. Either way you can preventively familiarize yourself with possible challenges and reflect upon your own evaluations and impulses for action.

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Research-based learning in times of (physical distance and) digitalisation - Strategies for research-based learning online

Another new term. Your university is calling for digital change to finally be actively stimulated and implemented in teaching. Your colleague also said that work could be made much easier with digital tools. In addition, you have moved, have a longer commuting distance than before and would therefore like to keep your time at the university as short as possible. But you would also like to continue to implement research-based learning. Now the question arises how you can support it digitally...

Keyword: Digitalisation

What are the advantages of supporting research-based learning digitally?

The support of research-based learning through digitalisation and thus increased e-learning has been one of the main focuses of FideS' research activities and is becoming increasingly important in times of global phenomena such as pandemics, globalisation and digitalisation. We assume, however, that: "E-learning is not exclusively [sic!] "virtual" teaching and learning but includes various methodological-didactical and organisational forms of ICT use within and in addition to classroom teaching" (Bachmann & Dittler 2004, p. 2 – translated by FideS-Team).

One result of FideS, however, was that there are not yet many links between research-based learning and digitalisation, but there are certainly points of contact: In many fields, research is taking place with increasing digital support (from online research to Skype conferences), and thus content references are obvious, but also aspects of simplifying organisation and (online-based) communication. Learning management systems and platforms offer not only an easier distribution of materials, feedback, suggestions and results, but also the possibility to promote the exchange among students outside of regular classroom sessions. "By using e-learning 2.0 tools in the context of research-based learning [...] the social, production and action-oriented potentials of research-based learning can be digitally applied" (Kergel 2015, p. 20 – translated by FideS-Team).

One shortcoming, however, is that there is still a lack of experience and software specially designed to support the process of research-based learning with digital media. In order to change this, we have developed a software within the FideS project that supports processes of research-based learning: FL Trail.

But even "everyday" digital instruments can already provide great support in everyday teaching and with research-based learning. At this point, we could of course point out many more advantages and potentials, but we would like to keep this vignette manageable and recommend the following further reading for all those who want to read more:

Bachmann, G., & Dittler, M. (2004). Integration von E-Learning in die Hochschule: Umsetzung einer gesamtuniversitären Strategie an der Universität Basel. E-Learning-Strategien und E-Learning-Kompetenzen an Hochschulen, Bielefeld, 47-60.

Dehne, J., Lucke, U., & Schiefner-Rohs, M. (2017). Digitale Medien und forschungsorientiertes Lehren und Lernen–empirische Einblicke in Projekte und Lehrkonzepte. In Bildungsräume. Proceedings der 25. Jahrestagung der Gesellschaft für Medien in der Wissenschaft, 5. bis 8. September 2017 in Chemnitz (pp. 71-83).

Kergel, D. (2015). Strategien zur Qualitätssicherung für ein forschendes Lernen mit digitalen Medien. Hamburger eLearning Magazin, 14, 18-21.

Reflective questions

The situation described above is a typical challenge that you could face if you implement research-based learning in your teaching. The following questions of reflection serve as impulses to look at such or similar situations from different perspectives and then to come to different decisions:

In which areas do you see the greatest potential for digitalisation?

What are your motives for digitising your course? (e.g. impulses from the environment, acute deficits, structural deficits, ...)

Where do you yourself work digitally in your research process and can analogies to the student research process be formed in your course?

What challenges could arise from the digitalization of your course?

How important do you consider the physical-personal contact with students and their communication with each other?

Which digital tools and analog instruments could students lack at home?

Do you know of any continuing educational opportunities for digital tools that might be of interest to you or helpful to students?

Actions

In the following, we present the approaches of universities whose coordinators of research-based learning offerings we interviewed during the research phase of FideS.

Note: In order to avoid data protection problems, it is advisable to obtain information in advance from the coordinators of your university and the specifications of the student associations. In this way, you can also move safely in the digital space and avoid ambigue legal areas, especially with regard to examination regulations.

Enriching and integrating - How can (presence) teaching be complemented?

Ask for support from universities and other advice centres for digital matters

Do not try to solve all problems alone. Often there are staff units or computing centres at the universities that know exactly how to deal with such obstacles.

Benefit of the action: You can keep your head clear to implement your teaching as good as possible and do not have to deal with software problems or equipment maintenance.

Complement courses using Learning Management Systems (LMS)

You can use online platforms to pass on information, to exchange material, but also as a discussion forum and for communication (e.g. with peer group feedback etc.) Most universities have set up such a platform - but the full potential of the platforms is usually unknown to the teachers.

Benefit of the action: The learning platforms offer the provision of teaching and learning materials independent of location and time. You can also create rooms in which students can provide their results and give each other feedback, e.g. in a kind of virtual poster tour.

Examples and further information on LMS can be found at: https://www.e-teaching.org/technik/distribution/lernmanagementsysteme

Use case studies from archives

If you want to use case studies for teaching - for example for analysis or reflection - you can use case platforms (such as the Kassler Fallarchiv and "Apaek" of the University of Frankfurt (pedagogy), "Die retrospektive Fallanalyse" (medicine) and other repositories or, if applicable, archives of your university). Real scenarios could also be recorded by individuals, but data protection and the consent of those filmed must be guaranteed.

Benefit of the action: Even in times when there is no access to the practice, you have access to these cases. In addition, you can work on certain topics in a goal-oriented manner because you can make use of a corresponding case. This is not always possible in practice.

Enrich digital lectures

Research-based learning also requires one or two introductory and methodological lectures, which can also be digitalized. You can not only record your presentation slides and make them available on an online platform. There is also the possibility to include additional questions, tests or the like to support the students in their learning and to anchor the important contents more long-term so that they really come into play during the research process.

Benefit of the action: Students are actively encouraged to think along with others and better combine what they have learned. The stimulating questions also allow you to imitate the active phases of your classroom sessions.

Use authoring tools to create interactive content

With so-called authoring tools you can, for example, make recordings of your screen (screencasts) and enhance your own recorded teaching/learning content with multimedia content. In this way you can make your inputs for research-based learning, such as methodological exercises or tips for creating presentations, even more motivating.

Benefit of the action: Authoring tools can be used to create multimedia and interactive e-learning content. The content created in this way can be reused or adapted for the next courses as desired and, through their implementation, appeal to the students' interest more than usual presentation slides.

Examples and further information on authoring tools can be found at: https://www.e-teaching.org/technik/aufbereitung/cbt_wbt/autorenwerkzeuge und unter https://www.uni-hamburg.de/elearning/werkzeuge/autorenwerkzeuge.html

Record e-propaedeutics

For students who do not participate in the introductory courses or who still lack previous knowledge of the basics of research-based learning, e.g. basics of different survey methods or similar, you can create handouts as e-propaedeuticals. In this way, students can access the instructions as video or audio on their own as required - and, if necessary, consult them several times. In addition, you increase the diversity of your offer and take into account the diversity of the students.

Benefit of the action: You save the time of picking up all students individually and can start with the implementation right away. Students who are not so well versed in the subject can continue their education independently.

Use communication software

The communication between students (among each other as well as with you), which is often so important for research-based learning, can also be realised digitally. For this purpose, you can use the various communication software options, e.g. Adobe Connect, Skype, the (video) chat functions of the LMS, and many more.

Benefit of the action: You can use virtual rooms for feedback rounds, presentation of results or for discussions, thus enabling exchange even without face-to-face meetings. Students can make contact if it is urgently needed. ATTENTION: When choosing communication software, please make sure that you comply with the data protection regulations of your university.

Examples and further information on communication software can be found at: https://www.e-teaching.org/technik/kommunikation

Set up a central information contact point

You can create a digital "helpdesk" where information is presented in a bundled form, for example in the form of explanatory videos or wikis. There your students will receive central information relevant to all aspects, e.g. on organisational aspects, poster design or methods. Audiovisual workshops and didactic media libraries in the sense of the "inverted classroom" are also useful. Please note that such material may already have been produced by others (as OER) and that you do not have to do everything yourself.

Benefit of the action: You can devote your full attention to supporting the process of research-based learning and student outcomes.

Use digitalisation for (inter)nationalisation

The non-necessity of presence does not stop within the radius of your university. You can start a cooperation across institutions and national borders. Exchanges with experts and students worldwide not only provide an insight into (research) practice, but also show what the digital spaces make possible.

Benefit of the action: The (inter)national exchange not only contributes to the motivation of your students, but also gives you an insight into the practice of the globalised world. Your work can also be made easier if you do not conduct the course alone, but together with other teachers or experts.

Use further education and qualification offers

Most universities offer further training on various tools. If you think that you can make even more out of your knowledge, then take advantage of the continuing education and qualification offers of your university or state.

Benefit of the action: This will not only strengthen your knowledge and skills in the digital handling of research-based learning, but may even provide you with methods or materials that will make planning even easier. Perhaps you will also find like-minded people at such events with whom you can plan and implement your teaching together.

Support periods of reflection

The reflection phases that may have been omitted should of course also be digitally replaced. Here, both questions developed by you as a teacher, which the students should answer, as well as reflection methods, such as the reflection guide to research-based learning oder das ALACT-Modell are useful:

(https://uol.de/fileadmin/user_upload/flif/Homepage_neu/Working_Paper/Riewerts_Rubel_Saunders_Wimmelmann_Gesamt.pdf)

(http://wirtrainieren.de/werkzeugkoffer/media/ Handout-zum-Reflexionskreislauf.pdf)

Benefit of the action: Since reflection also takes place outside of fixed time frames such as face-to-face meetings, digital instructions can be used to ensure that it does not fall by the wayside. In addition, reflection guidelines developed by experts can be used, so that you may even be able to save yourself some work.

Virtual teaching - How can presence be adequately replaced?

General conditions

Distribute software/hardware for research activities to be conducted from home.

If your students need software or hardware for working with data in the course of their research activities, these would have to be provided for use at home. Often loaned equipment and licences are available - please contact your computing centre or contact person at the faculty.

Benefit of the action: Students can thus collect and evaluate data from home and are not forced to come to the university or go to the computing centre. They are thus able to pursue their research activities regardless of location.

Allow small groups to have their own space

Create separate rooms in online platforms for the small groups at your courses, where they can work undisturbed and without pressure. As a teacher you should intervene as little as possible (or even have no access at all), which is possible in many LMS.

Benefit of the action: Students can communicate without feeling pressure to deliver and without having to meet in person, and can work on documents in self-study phases in a secure room.

Feedback/Structuring/Communication:

Use structuring software

You can support the implementation of your course with communication and cooperation platforms that accompany the teaching. These are - in contrast to usual teaching and learning platforms - partly directly geared to the process of research-based learning and support you not only in providing materials but also in group formation or in coordinating student feedback among each other.

Benefit of the action: You can have software such as FLTrail help you with the group division, the structuring of the research process into sub-steps and their related reflection. It enables you to conduct seminars digitally by suggesting stages of the research process and thus enable students to work on them in a structured way. This allows you to view the progress of the process and structure it by deadlines, and (research) artefacts can also be exchanged and reviewed.

Examples of structuring software are:

FlTrail: https://fltrail.cs.uni-potsdam.de/app/gemeinsamforschen/info/readMe-docent.jsp

incom.org: https://about.incom.org/

Provide digital consultation hours

Set an appointment once a week on which you can be reached for a digital consultation in a specific digital room (e.g. Zoom, Adobe Connect, or the chat functions of the LMS...) Many of these communication platforms even have a kind of "waiting room function", so that students can take turns one after the other, just like in real life. Of course you can also use this measure to enrich your classroom teaching.

Benefit of the action: These consultation hours can be used to solve problems that prevent students from working, such as software problems. Technical instructions can also be provided, which are usually already available from the providers of the online platforms. In this way, you do not have to be present at the university, nor do the students occasionally turn to you with questions about technical problems.

Employ students as e-tutors

You can also use e-student tutors as team companions. They observe the process by regularly consulting with students and giving you feedback on group behaviour and the research process at regular intervals.

Benefit of the action: The e-student tutors take on the role of feedback providers. In this way, differences or even deficits become explicit and students can decide how to proceed. In addition, they can relieve you of work by dealing with digital implementation problems.

Examination:

Set up digital examination formats

You can encourage students to create an e-portfolio and use it as a research diary/field diary and at the same time as an examination artifact. Students can create an e-portfolio during the term (e.g. in the form of a blog), for which you initially define the structure: It can be used for documentation, planning and reflection purposes, for example, and contain many different media formats (podcasts, posters, videos, exposés, ...). Another approach could be to present the results in the form of audio guides or a digital map to make them accessible to a broader, non-specialist audience.

Benefit of the action: Students can use the structuring elements of such a digital examination format for the ongoing process and are constantly encouraged to reflect. Furthermore, this process-accompanying examination format better reflects research-based learning and produces results that can be relevant beyond the course.

Additional tips and tricks

Use open-access magazines as publication media

For the presentation and publication of the students' results you can also use student or open access magazines, such as "Forsch!" (https://openjournal.uni-oldenburg.de/index.php/forsch/index). Furthermore, it can be useful to simulate (before submission or in general) an online review process, as is common for publications in magazines.

Benefit of the action: First of all, the principle of research-based learning is followed, that student results should be published if possible. Furthermore, it can be very motivating for students to see their results published (instead of disappearing in a drawer) and they learn which aspects have to be considered when submitting their results. It should be noted that the results should not be standard term papers, as scientific papers are different and are more likely to be submitted.

Award prizes for good digital teaching (for coordinators)

In order to keep the motivation of your colleagues and students high and to encourage them to adopt digital teaching concepts, prizes can be awarded for particularly successful digital teaching concepts.

Benefit of the action: It is not only teaching that benefits if it is promoted more due to good implementation. It is precisely the diversity of digital teaching formats that inspires the implementation options at universities. This has positive effects for both teachers and students.

Invite “digital high-flyers“ to participate

You can let students with high media competence take part in the design of your digital events and also respond to their wishes and suggestions for improvement, so that they are not underchallenged and at the same time everyone benefits.

Benefit of the action: On the one hand, you safe labour, on the other hand, students are thereby involved in the digitalised design of their university's teaching, which can increase motivation. In addition, the students experience that their contribution is actually useful and is seen.

Use existing material

Use already existing (info) materials, e.g. instructions by software developers, simulations on YouTube, wikis from colleagues at your (or other) university(ies) or let students help you create such aids. There are already many things available as OER, you usually don't have to reinvent the wheel completely. In addition, OER or CC-licensed materials can often only be used in part, so that you can put together your own suitable documents.

Benefit of the action: You can save time and effort in providing help for the students and also for yourself by researching in advance. This gives you more time to support the students in the process and in evaluating the products.