



METHODOLOGY OF ONLINE ASSESSMENT

INTRODUCTION

This is a short handbook that should serve as a practical guide for assessing and testing students in an online environment. It is important to remember that the basic question you need to ask yourself when assessing students – whether you are conducting the assessment online or face to face is always the same – Is the assessment really focusing on what students were supposed to learn? Or in other words – is the assessment in line with the course goals and is the assessment going to verify whether the students gained those exact skills and knowledge that they should have gained according to the course goals?

Therefore, before you start planning assessment, first you need to look back at the course goals and check what knowledge and skills are students supposed to gain from this course. We also highly recommend informing students about forms of assessment at the beginning of the course so that they know what your expectations will be.

Even though the basic principle of assessment doesn't change by switching into an online form, it is not possible to simply shift assessment online without any changes and expect it to work the same as in a classroom. Online assessment has its specifics and rules clarified at the beginning of this handbook. Further you will find techniques for formative and summative assessment with examples usable in online environment.

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CHAPTER 1

CHEATING IN ONLINE ENVIRONMENT

„Online environment provides students with many opportunities to cheat.“

„Students cheat more in online environment.“

„I can't have the same control over my exam as I had in the classroom.“

These are the most frequent arguments teachers use to describe disadvantages of online assessment. We can agree with them up to some level, but there are reasons to disagree with these arguments:

1. Moral reason: Those who want to cheat will find a way, independently of the environment. A student who won't cheat in the classroom, will also not cheat in an online environment.
2. Technical reason: Tools, such as smartphones with cameras, variety of apps, social networks, internet pages with ready assignments to download etc. - all this is available also to students taking face-to-face class. Many of the methods teacher use to prevent cheating are the same independently of the mode of course delivery.

There is one thing we know for sure - cheat-sheets, copying work of others, and other forms of cheating exist in classrooms too - specifics of online assessment is the fact that cheating prevention is more complicated for online teachers. There are different forms of cheating, such as:

- sharing of screen with another computer (for instance Teamviewer),
- use of progressive technology (for instance micro Bluetooth),
- taking notes on phone and use of different apps (for instance Cymath, Brainly),
- identity pretense,
- sharing of correct answers with classmates over social networks etc.

We need to focus on smart strategies to prevent cheating.

Because as the author Karel Čapek said: *„If it is possible to cheat at homework, cheating is deserved.“*

Vladimír Burjan (2020) lined up 5 strategies, that could help minimize cheating in online environment:

1.1 STRICT CONTROL

- Author does not recommend this strategy. Quite the opposite, he points out that the teacher has very small chance to win a fight against a student working from home, when it concerns modern technologies.

We can add that these are strategies focused on using different software for test proctoring, automatic control, ID checks, locking of computers, coding of data, using safe browsers etc. This is connected with issues of complicated technical support, very high cost, as well as GDPR issues - protection of privacy.



1.2 DIFFERENTIATION OF ASSIGNMENTS

- This strategy effectively eliminates copying between classmates. If there are no two identical assignments, copying disappears. Assignments don't need to be drastically different from each other, sometimes all that is needed is to change just one parameter. Good tip might also be individualization of assignments - to pick a parameter in direct relation to particular student (for instance to describe a family member).

Examples:

- Select your favorite movie and describe it in 5 sentences.
- Which childhood experience significantly influenced you and why?

1.3 ASSIGNMENTS, WHERE EVEN "MR. GOOGLE" CAN'T HELP

- Strategy of creating assignments that can't be solved by Internet search.

Example:

- How would it look like in a classroom, where instead of teachers there were robots?

1.4 ASSIGNMENTS THAT REQUIRE WORKING WITH INTERNET

- As it seems inevitable, that students will be using Internet while working on their assignment, you can use this fact for your benefit. It is important for students to learn to use the Internet effectively. If an internet search is a part of their task, there is no need to try to figure out how to prevent the students from searching the Internet.

Example:

- Find a discussion on topic: "Do you want to know a person's character? Give them power." Express your own opinion on the topic.

1.5 ASSIGNMENTS THAT SPARK INTEREST

- This strategy is built on an assumption that one of the reasons why students cheat is the fact that the task is not interesting for them and they don't see any connection of the task with their own life. So it might be a good idea to try to create assignments that interest them and students themselves will want to know the answers.

Example:

- Some company started to hire people for executive positions based also on their good results in playing certain computer games. Find out which games they use and why the companies decided to do this?

SUNY website (2021) and University of Illinois website (2021a) contain lists of more strategies to prevent cheating. The list is enriched by experience of this handbook:

For submission of term written assignments:

- Ask students to submit drafts during the term - notes, outlines, schemes etc. (it will be very easy to notice if the final work differs from drafts and outlines and might have been downloaded from the Internet).



- Don't let students to fully choose their topic (to choose something that might be easy to download). Select topics connected to the course content, but also to recent events, classroom discussions etc. (to make it harder to find ready-made essays online).
- If possible, when working on a term project, ask students to obtain an original data - to conduct a little survey, interview, simple measurements, collect samples etc. Interview records, questionnaires, sample collection protocols etc. should then be attached to the final assignment.
- Request students to quote literature correctly and include reference list at the end of their essay. School essays available online for download usually don't have reference lists and it is really hard to "create" a reference list to existing stolen text.
- If you are suspicious, you can ask students to provide the literature they were quoting (if you quote a text, you need to have it at your disposal).
- If possible, try to get to know your students during the term. Ask them for short written texts (drafts, discussions, short written tasks etc.) You can get a good picture about their individual writing styles and be able to compare it with their final essay.
- If you know the websites where student often go to copy papers, use them during the term as examples. Grade essays on the website, explain to students what is wrong with them (they will be strongly discouraged from trying to submit to you a work from one of these websites, if they know you are familiar with them).
- Explain to students at the beginning of the term what plagiarism is, how to cite literature correctly and what would be the sanctions if they get caught. Better informed students cheat less.

For Online tests

- If the system enables it, try to set it so that different students will get different questions in the same test (for instance random questions in question bank in Moodle).
- Set up a time limit for the test - students will not have extra time to search for answers.
- Make sure the test is accessible only in a clearly set time window. If possible, all students should be working on the test at the same time, so that they can't share questions and answers.
- If possible, set up the test to be held in a proctored classroom. This is the easiest way to keep cheating under control.
- If possible, include also open-ended questions in the test, questions where the students need to use their own words and show that they really understand the issues (it is impossible to copy open-ended question from a classmate). Even better, if possible, personalize these questions (for instance ask students to use an example from their own life to explain issues etc.)
- The test should not be the only tool used evaluate students' knowledge. It should be in combination with projects, presentations, assignments and other tools.

CHAPTER 2

FORMATIVE EVALUATION

Formative evaluation is continuous evaluation conducted during the term (projects, activities, presentation etc.). Summative evaluation is more formal evaluation at the end of the term. One of the goals of formative evaluation is for students and teachers to understand how the course progresses and it presents the teacher with an opportunity to make corrections.



Formative evaluation is also a tool for teacher to make students work continuously during the term. In online courses this role of formative evaluation grows, because in face-to-face classroom it is easier to engage students than in an online course. When teaching online, all continuous and engaging activities need to be planned and organized.

During formative evaluation it is not necessary for the teacher to evaluate all student work. It is possible to introduce peer or self-evaluation with firmly set rules.

2.1 PEER EVALUATION

You can divide students into small groups, or pairs and ask them to provide feedback for each other. You need to set up a clear criteria and to define the form of provided feedback.

For peer evaluation it is possible to use group discussion forum, Workshop tool (Moodle), chat, Class Notebook (MS Teams).

Example:

- You will be assigned a random anonymous assignment of one of your classmates.
- Use the attached rubric and assign points according to the listed criteria.
- Include notes and explanations to your decisions.
- Upload your evaluation.

Rubric example (more information on rubrics is in Chapter 3):

Criteria	Fully fulfilled (2 points)	Partially fulfilled (1 point)	Not fulfilled (0 points)
Length of assignment	Length is within the limit of +/- 100 words from required length of 1500 words	Length is within the limit of +/- 500 words from required length of 1500 words	Length is outside the limit of +/- 500 words from required length of 1500 words
Analysis of the issue on page 24 of the textbook	Analysis is clear and understandable and the literature is cited correctly	Analysis is not completely clear or literature is not cited correctly	Analysis is not clear and at the same time the literature is not cited correctly
Analysis of the issue on page 25 of the textbook	Analysis is clear and understandable and the literature is cited correctly	Analysis is not completely clear or literature is not cited correctly	Analysis is not clear and at the same time the literature is not cited correctly
Total			

2.2 SELF-EVALUATION

If you provide students with clear criteria, you can also ask them to do their own preliminary evaluation. The criteria must be very clear for the self-evaluation to make sense. You can use a similar rubrics like the the one shown above. Of course, if the task is simpler, the evaluation rubric might be simpler too.



Example:

Assignment submitted on time	Assignment had at least 250 words	Assignment contained a summary of basic ideas of the article
yes/no	yes/no	yes/no

2.3 EXAMPLES OF FORMAL EVALUATION TECHNIQUES

Goal of these evaluations is besides checking on students’ knowledge also an effort to engage students. In the classroom you can see exactly when students start losing interest and do something about it. In an online course it is not possible to monitor students so closely - so it is recommended to plan ahead including formative activities in regular intervals.

Below you will find a few tips and ideas for such formative activities - prepared according website Edutopis (2021), supplemented with ideas and experience of authors.

- Dipsticks
Give students short, brief, check-in questions, or also funny questions out of context. You can ask students to briefly summarize what they have just learned, how it was presented to them etc. You can use Likert scale. This is a very practical activity to hold students’ attention during online lectures.

Example:

Fantom objects represent real objects

Strongly agree agree I don’t have an opinion disagree strongly disagree

- One-page activities
This is a wider application of the previous activity. Ask students to write a short (1-2 paragraphs, one page) evaluation of the lecture - write and explain your opinion, or eventually to write a short summary from literature. It is necessary to define a deadline and to provide feedback.

Example:

Write a short summary of the lecture article.

- Two minute Summary
Give students 2 minutes to summarize what you were talking about and to understand. You can also limit this activity by the number of letters (140 is the usual length for text messages). Similar to Dipsticks, this is a good tool to keep students engaged and to get a feedback (did students understand what I was explaining?) Also here, it is important to provide feedback.

Example:

Within 130 signs summarize the main idea of today’s online lecture.

Or:

In 2 minutes summarize the main ideas of this online lecture.

- Multimedia Evaluation



Most of students own smartphones and have an ability to take pictures and videos and to share them electronically. This could be used in formative evaluation. Students can record interviews with their classmates or family members, they can take pictures of certain plants, insects, they can draw schematics, arrange scenes, write poetry etc...

Example:

Take a tea bag and dump the tea from inside. Stand the empty bag on its short side and light up its top. What will happen? Record the experiment on video and describe all physical processes that happen.

- Two Stars and a Wish

Students evaluate the lecture by assigning stars to parts that they liked and marks parts that need to be repeated or improved.

- Ask Three and then Me

If a student has a problem when working on an assignment, in the first round they should seek advice from other classmates. When students can't figure out the problem together, then is the time to contact their teacher.

CHAPTER 3

ASSIGNMENTS

Chapters 3-6 focuses more on summative evaluation, i.e. more formal grading. The goal of a summative evaluation is to determine whether the students learned what they were supposed to learn taking the course. Quite often the final grade of the course reflects the final summative evaluation, but it is also common to have multiple graded activities in the course and to create a final grade by combining these grades.

Most common forms of summative evaluation in online environment are assignments, discussions, group projects, presentations and tests.

3.1 WHAT ARE ASSIGNMENTS?

Assignments are student work, that students submit for teacher to see. The teacher evaluate the assignment and provides a feedback. Assignments can have different forms. It does not have to be a written text, an assignment can have a form of a research paper, essay, a case study, blog, group or an individual project atc. When planning an assignment, it is also possible to use the fact that due to their smartphones, students have an ability to record voice, or video, take pictures of nature or art etc.

It is very important that while preparing an assignment, students need to know exactly what, why and how theyr are supposed to do and how their work will be evaluated. After they submit their work, they also need to get a detail feedback to understand what they got right and what not.

3.2 HOW TO PLAN AND EVALUATE ASSIGNMENTS

- First, you need to inform students on what exactly and why is requested of them.
- Define content of the assignment, its size and due date..
- Before submitting an assignment, it is very important for students to know how they work will be evaluated. Most teachers use evaluation rubrics. You will find more information on rubrics lower in this chapter.



- After they submit the assignment, you need to provide students with detailed feedback, i.e. evaluation according to the given criteria with explanation of what and how could be improved.

Example - text assignment:

As your final assignment, write a report on a new technological innovation (each student will focus on a different invention). The goal is for each student to become an expert on a particular issue - to know as much as possible about it.

The report needs to contain following information:

- What are the trends, what is it good for, how does it work (go as deep as you can while still keeping it understandable). Provide an explanation in your own words (like for a grandma) and quote your sources.
- Your opinion on whether this technology is being developed based on society's needs or this is a research progress. You need to explain your point of view and provide your reasoning.
- Your opinion on whether this technology will benefit society. You need to explain your point of view and provide your reasoning.
- Your opinion and what will happen with this technology in the future, what benefits and/or damage it can bring. You need to explain your point of view and provide your reasoning.
- The student needs to find and use at least three serious resources (not Wikipedia) and at least 5 articles on the technology.
- The report needs to contain at least **700 words**.

Example - multimedia assignment:

- After reading two of the case studies, shoot a short video - maximum length 1 minute, where you compare the case studies.
- To compare the case studies, use 10 criteria listed in the topic 3 of this course. For each of the criteria, you need to provide explanation for your opinion and state reasons for your decision. You can provide wider explanations, but the length of your video should not go over the stated time limit..
- Upload your video to cloud, or use a stream service (Youtube, MS Stream, OneDrive etc.). When submitting the assignment only provide the link.

3.3 SCAFFOLDING OF ASSIGNMENTS

This technique is very useful in situations, when you expect a larger and more complex work from your students at the end of the term. The principle is to divide the large task into smaller, formative tasks that students submit during the semester and receive a feedback. They can use the feedback to improve their performance in further tasks. This way you can avoid situation where a student misunderstands the task and spend a lot of time working on something that does not make much sense.

And thanks to continuous feedback, the final complex task will reach a much higher level if there was no input from the teacher.

Example:

Goal: Student should submit a full research article by the end of the term..

- Assignment 1: Topic of the Article - what do I want to research? Why it should be researched? In which way? .
- Assignment 2: Literature Overview.
- Assignment 3: Collecting Data.
- Assignment 4: Data Analysis and Conclusions.
- Assignment 5: Full Research Article.



3.4 EVALUATION RUBRICS

Without realizing it, in real life, we often create small evaluation rubrics in our heads, where we consider multiple factors (for instance when choosing food: Is it fresh? Is it salty? Is it sour? is it green?,...).

Definition: rubrics is a tool, that enables us to evaluate student’s work using multiple criteria in given context (University of Illinois, 2021b).

Most often, rubrics are used for:

- evaluating how well students understand the course content,
- providing feedback for students,
- formative evaluation,
- informing students on standards and expectations.

Rubrics usually evaluates multiple criteria, so it comes in a table format with explanations on different levels of fulfilling individual criteria.

Advantages of using rubrics (University of Illinois, 2021c):

- they provide a key to evaluate more complex tasks,
- they guarantee consistent evaluation even if there are multiple evaluators,
- they assure better objectivity - personal preferences of an evaluator towards particular students can be eliminated,
- thank to rubric evaluation is tabular and controllable, in the case that a student complains,
- rubrics can help you teach (it can serve as a reminder what the students need to learn),
- rubrics can enable peer-to-peer evaluation and self-evaluation with some level of objectivity.

Disadvantages of using rubrics:

- even the best rubric is not able to catch everything that a student is supposed to learn. So, a student going through the course with the least possible effort will only focus on issues caught in the rubric,
- for some students, rubric provides a structure for their task and suggests how to process, for others rubric might feel limiting and stifling in their work,
- if the rubric is too complex, student might see it as confusing and gives up. Hence rubrics should be as simple as possible within the circumstances.
- rubric logics might sometimes show gaps that can confuse students or provide them with shortcuts to make their work easier - especially in a situation with peer-to-peer or self-evaluation. Most teachers in this situation supplement rubrics in a effort to “patch the holes”.
- it takes time and effort to prepare a good rubric and to apply it.

Example - simple rubric:

Assignment submitted on time	Assignment was at least 500 words	Assignment contains summary of basic points of the article
Yes/No 1/0 points	Yes/No 1/0 points	Yes/No 1/0 points



Example - more complex rubric (rubric for the text assignment listed as example in part 3.2 above)

Criteria	Fully met - 2 points	Partially met - 1 point	Not met - 0 points
What is the assignment about? What is it good for? How does it work?	All three points are explained	Only partial explanation	No explanations
Your opinion on whether this technology is developed based on society needs, or it is a research progress	Opinion expressed, reasoning included	Opinion expressed, reasoning missing	No opinion, no explanation
Your opinion on whether this innovation is beneficial for society	Opinion expressed, reasoning included	Opinion expressed, reasoning missing	No opinion, no explanation
Your opinion on what will happen with this technology in the future	Opinion expressed, reasoning included	Opinion expressed, reasoning missing	No opinion, no explanation
You need to find, use and correctly quote at least three sources	Three sources used and correctly quoted	Less sources, missing and/or wrong quoting	Sources and citations are missing

KAPITOLA 4 DISCUSSIONS

Teaching via discussions is not a new idea. Ancient Greeks were already having discussions with their students, many teachers use discussion as a teaching tool in their classrooms. Discussion is a tool that can support critical thinking and it provides teachers with an opportunity to see how well students understand the course content. Discussion as a teaching tool is used also in an online environment.

In an online environment, discussions can be a useful tool to motivate students to be more active in their learning. Discussions are often referred to as “backbone of online learning” (Palloff & Pratt, 2011).

4.1 SYNCHRONOUS VS. ASYNCHRONOUS DISCUSSIONS

Synchronous discussion, i.e. discussion taking place online in a real time simulates discussion in a classroom better. Synchronous discussion is usually conducted online via videoconference or text chat. Such discussion is spontaneous and faster, however, slower students don't have time to think about what they want to say and they often stay out of discussions.

Synchronous discussion are often used for group work during video-conferences, or as a support tool for video-conference class, where students can use text chat to ask questions, or indicate problems. Teachers use chat also for short surveys, quick control questions etc.

Asynchronous discussions is a discussion conducted during a longer time period - often a few days or a week or two. Usually it runs in text form in discussion forum or a similar tool. Asynchronous discussions have been used in online courses since 1990-ties, there are many tips and advice on how to organize and use these discussions to make them useful for students' learning and development.

Advantage of asynchronous discussion is the fact that each students has time to prepare their contribution, to explain their point of view, or even to list literature they quote. Each student get an opportunity to participate. In



asynchronous discussions teacher can demand detail explanation of their statements from students, or also to list their sources and hence discussion can reach academic level and level of critical thinking. Disadvantage of asynchronous discussion is the fact that it requires much more time and effort from teachers and students than synchronous discussion.

4.2 HOW TO PLAN A GOOD QUALITY DISCUSSION

Spontaneity is more rare in an online environment, so if you want to have a high quality online discussion in your course that will really help students to learn, you need to plan ahead (Bender, 2012).

- *Clearly define what you expect from students during discussion*

Students need to know how often they are supposed to contribute to discussion, what discussion contributions should contain, what form are they supposed to have, what content.

- *Define discussion style*

Students need to know how formal should their contributions be. Discussion (even in written form) should be similar to a discussion in the classroom (focusing on content, not too formal).

- *Discussion should be graded and counted towards overall course grade.*

Large part of students (in any country) will proceed through their course with a goal to pass with the least possible effort. On the other hand amount of gained knowledge is directly related to effort invested. Voluntary non-graded online discussions are more spontaneous, but usually succeed only if the topic is “hot” for the students and everybody wants to express their opinion. This though, doesn’t apply to most discussion topics and then it is better make discussion compulsory.

- *Define (and ensure) rules of decent behavior in discussion*

Students would know the difference between disagreeing with someone's opinion and offending the person. ethical rules for discussion need to be defined.

4.3. HOW TO ASK QUESTIONS IN DISCUSSIONS

Goal of online discussion is to support critical thinking, students should think, compare, analyze issues and search for solution - they should not be asked to offer uniform answers from their textbook. Discussion questions need to be set up with this goal.

Possible types of questions that support critical thinking are listed according to book of Tisha Bender (2012), supplemented by the authors.

- Questions that search for more proof.

Examples:

- How do you know that?
- What data led you to your result?
- What does the author say on the topic of your statement?
- What proof can you show to somebody who doubts your opinion?

- Questions asking for explanation



Examples:

- Can you say it in a different way?
- What would be a good example of a situation you are describing?
- What do you mean?
- Can you explain the term you just used?

- Open-ended questions

They start with words Why? and How? so that the students form opinions, resolve problems, and study new things...

Example:

- Why do you think so many people become teachers, even though the salaries are low and work conditions often even worse?

- Connecting questions

Examples:

- Is there any connection of what you just said with what I said before?
- What would a comparison between what you said and what Diana said look like?
- How was your observation affected by what we agreed upon last week?
- Do you think your idea supports or opposes what we are talking about here?

- Hypothetical questions

Examples:

- What would be the result of WWII if Hitler hadn't attacked Russia?
- Concerning the video we watched last week - do you think the discussion would have been different if the lecturer didn't harass the students so much?
- If Shakespeare created Iago more sympathetic - how do you think it would influence the story of Othello?

- Questions of cause and effect

Examples:

- What do you think will happen if we doubled the numbers of students in these discussions?
- Why do the stadium parking fees always double when there is a match?
- If this workshop was conducted in a classroom instead of online, would it influence its effectivity?

- Questions for summary and synthesis

Examples

- Which are (one or two) the best ideas from this discussion?
- Based on our discussion last week - what do we need to discuss today to understand the problem better?
- What is still unclear about this topic?

4.4 HOW TO MODERATE AND MANAGE ONLINE DISCUSSION

Tips and Tricks are listed according to University of Minnesota (2021), supplemented by experiences of the authors.



Tell your students up ahead what you expect of them and what they can expect from you. Let them know how often you will login and answer the questions and how will it take for them to receive your feedback..

Don't answer every student contribution. If the teacher is too active in discussion, students will stop contributing , because they start to feel like the teacher has all the answers. On the other hand it is necessary for the students to know that the teacher is there and reads their contributions. If they think you are not following the discussion, they will also stop contributing. You need to find the balance in answering. If the system enables it, you can mark contributions you consider to be good.

Limit number of discussions in one course. If there are too many discussions, students (and consequently also teachers) are overwhelmed and the number of good contributions is limited.

Archive questions and discussion records from previous years. Learn from them. Questions that confused students need to be changed or explained better. Questions that caused disagreements could be reformulated and redirected etc.

Rubric for discussion evaluation should include all necessary factors, on the other hand, try to keep it as simple as possible - to keep it understandable for students.

Example of discussion:

- Find an interesting article concerning one of the topics listed at page 54 of the textbook and write a short summary of the article as your discussion contribution. Include also your opinion on the article, express whether you agree or disagree with the article and what are your reasons.
- Your first contribution needs to have at least 250 words. Besides your first contribution you need to react to at least two contributions of your classmates. In your reaction express your agreement or disagreement with their opinion and state your reasons. Provide links to your sources. Ask questions, offer comparisons, engage in academic discussion with your classmates. Your reaction needs to have at least 150 words.
- Your first contribution has to be posted before April 5, 10 pm.
- At least two reactions to your classmates' posts need to be posted before April 7, 10 pm..
- Discussion will be evaluated according to the attached rubric.

Example of rubric for discussion evaluation:

Task	Fulfilled (2 points)	Partially fulfilled (1 point)	Unfulfilled (0 points)
Main contribution	All three criteria fulfilled (250 words, summary, opinion)	One of the three criteria unfulfilled	2 – 3 criteria unfulfilled
Reaction 1	All three criteria fulfilled (150 words, opinion, reasons)	One of the three criteria unfulfilled	2 – 3 criteria unfulfilled
Reakcia 2	All three criteria fulfilled (150 words, opinion, reasons)	One of the three criteria unfulfilled	2 – 3 criteria unfulfilled
Total			

4.6 OTHER POSSIBILITIES FOR DISCUSSION FORUM USE



Asynchronous discussion forums are a standard equipment of almost all Learning Management Systems used for online learning. It is possible to use them also for other purposes than discussions.

- *Team Work*

You can use discussion forums for small groups - to provide students with private spaces to communicate within their groups. An example could be a group analysis of case studies..

- *Peer to Peer Assignment Evaluation*

You can create group discussion forums for groups of two or three students, ask them to upload their assignments there, where only other members of their group can see them and then they can provide evaluation and feedback for each other.

- *Collecting Arguments For and Against an Opinion.*

Discussion forums can be used for an activity in high school debate style. Choose two students (or two small groups of students), give them an opinion and task them with collecting arguments, one group to collect arguments supporting the opinion and the other opposing the opinion. Other students can later review the collection and vote which side convinced them..

- *Collecting Information and Materials on a Particular Topic.*

Use the fact, that in online course your students are in different locations. If you can find appropriate topic, ask them to collect data, information or materials on the topic in their environment. These could be a nature pictures, earth samples, water samples, interview with people, local folk tales etc. They can analyze data together in a discussion forum.

- *Theory Analysis*

Besides collecting data, students can use discussion forum to analyze theories and discuss their applications in groups.

- *Term Assignments*

Offer students an opportunity to use discussion forums to share topics and methodology of their final assignments. Students can help offer comments to each other and use gained information to improve their final assignments..

- *Current Social and Political Events*

If the topic of the course is connected to current social or political events, it is a good idea to organize discussions on some of these topics. If it is a current topic, there is a good chance that students have opinions on it and want to share them. You need to be careful to not let such a discussion run out of control, as it might become passionate.

CHAPTER 5

GROUP PROJECT AND PRESENTATIONS

Learning is a social activity and students need the feeling that they are not alone, they need communication with classmates. The feeling of community is very important. In face-to-face classroom students create community naturally. Online students are more isolated and it is necessary to include group activities that will encourage communication and collaboration among students.



5.1 GROUP PROJECTS IN ONLINE ENVIRONMENT

Group projects are often used as tools also in face-to-face courses - sometimes successfully, sometimes less so. Failed group project means that more active students do all the work for the lazy ones, a successful project means productive collaboration and ideas sharing (Lieberman, 2018).

Planning of group projects in an online environment is similar to planning group projects for a classroom, however there are some factors that need to be taken into account. Instructions below are based on articles of Lieberman (2018), Smith Budhai (2016) and experiences of the authors.

1. *Creating the Groups*

The simplest (and recommended) is for you as a the teacher to be the one to create the groups. This way you can make sure that groups will consist of students whose abilities can complement each other. If you decide to leave group creation up to the students, you need to provide them with sufficient time to do so (there are inevitable delays in asynchronous communication, coordination will take some time).

2. *Keep the Group Small and if Possible with an Odd Number of Members.*

Students can find it hard to coordinate their schedules to find the time to meet in a real time to divide tasks among themselves. If their number is higher than 5, finding a time for meeting becomes a problem..

When there is odd number of members, in the case of disagreement a simple majority can decide.

3. *Clearly Define Your Expectations on How Much Effort Each Group Member Needs to Contribute*

Each project, including group projects, should have an evaluation rubric that students will be familiar with ahead of time. With online groups, you can go one step beyond and define roles for particular group members, so that it will be easier than to see which member of the group has been slacking if that happens..

4. *Create a Communication Space for Each Group*

Whether you open a communication channel in Teams, discussion forum in Moodle, or any other environment, each group needs space for their communication and coordination.

5. *Monitor these Spaces*

Let students know up ahead that you will occasionally do it. That way you will be able to step in before students come to you with a problem. You will know which students are active, who works hard, who contributes only when prompted and who does nothing.

6. *Explain to Students How to Provide Feedback for Each Other*

Explain to them how constructive criticism looks like, you can prepare a template on how to provide feedback for each other (learning to communicate and criticize without offending is one of the goals of all group projects).

7. *Don't Evaluate Project Only as a Whole, Look Also at Individual Contributions of Group Members*

It is important for students to know up front that if they slack as group members, it will reflect on their grade for the project.

5.2 PRESENTATIONS

Online student presentations as evaluation tool (University of Leeds, 2021):



- help students to improve their communication skills,
- offer opportunities for group work and for providing feedback among students,
- providing teachers with opportunity to see what the students know and how they understand it and in the case it is needed, an opportunity to adjust the teaching.

The same way like with group projects, if you want the process of preparation, presentation and feedback run smoothly, planning is necessary (University of Melbourne, 2021):

1. Prepare Detailed Instructions for Students

AS with all tasks discussed previously, students need to know what to do, when and why. For a presentation, you also need to set technical criteria and parameters for it.

Example for setting parameters for presentation (content)

Create a fiction company.

Create a common presentation that will include:

- Enterprise plan: company description, market analysis, marketing, business and financial plan, human resources.
- Divide positions in your company - and describe your roles (each student presents this part individually).
- Create a logo for your company.
- Create a commercial slogan for your company.

Example of technical instructions for group presentation (form):

- 10 to 20 slides, description for each slide included in notes.
- Text is brief, large enough to read at distance (at least 20 pt), explaining details.
- Pictures and text supplement each other, they don't contradict each other.
- There is sufficient color contrast, enough of "empty" space.
- Background doesn't overshadow text and pictures.
- Graphs and tables are simple and understandable.

2. Provide students with evaluation information

Create evaluation rubric - in a similar way like for assignments. Use above mentioned criteria assign points. Provide students with the rubric up ahead.

3. Plan the time and way in which the students will present.

Students need exact information on:

- time for the presentations,
- time limit each group will have for presentation,
- in what forms and with what tools the students will be presenting,
- in what form and when student receive feedback from their teacher, or from classmates (whether and when can students ask questions or how and when should they provide feedback).

4. Manage presentations, eventually feedback from classmates

During the presentations, you need to make sure students do what they are supposed to do - keeping time limits, collecting questions, feedback etc.

5. Provide feedback to students

You need to provide clear and constructive feedback in line with the evaluation rubric within the promised time.



CHAPTER 6

TESTS

Using tests to evaluate students knowledge is probably the most common way of student evaluation. There are some specifics to using tests in online environment though.

6.1 WHAT DO YOU NEED TO KNOW ABOUT ONLINE TESTS

While planning an online test (based on article University of Waterloo, 2021 a experience of the authors):

- Be aware that it is not entirely possible to prevent cheating or copying in online tests.
- Reconsider whether the test is absolutely necessary in your course. Maybe you can use an assignment, project or a presentation that requires original contribution from each student making cheating less of a problem.
- Make sure that you are testing for knowledge that the students were really supposed to gain in your course - refer to the course goals.
- Create your online test a little bit shorter and a little bit simpler than you would create of face-to-face class. Filling an online test occupies a certain part of cognitive capacity for a student, so their capacity to focus on question content is a bit lower.
- Give all students the same time limit for the test, but keep the test open for a little more. Due to different technical difficulties not all students will be able to open the test at the same time.
- Let students know what to do if they lose Internet connection during the test and whom to contact in the case of other technical issues.
- Be available for a short time before and during the test.
- Remember that students will be stressed and might panic. React quietly and reasonably.
- Be aware when you are preparing the test, that students will attempt to do the test with an open textbook.
- You can consider set a up a shorter time limit for test, causing students simply not have enough time to search for answers in their textbooks. On the other hand, a short time limit increases stress for students, which makes it not an ideal solution.

Further we will look at most used types of test questions: true/false, matching, short answer, essay and multiple choice question.

6.2 TRUE/FALSE QUESTION TYPE

True/False questions consist of one statement and students decide whether the statement is true or not. These questions are used to verify how well the students know the course content, whether they understand the theories and concepts. Students move through these questions fast, it is possible to use multiple of them in one test, but the preparation requires longer time and effort.

When answering such a question, the student has a 50% chance to guess the answer right.

When preparing True/False questions, you should avoid:

- negatives and double negatives,
- long and complex sentences,
- generalization,
- unclear statements,



- trivial questions.

What to do:

- use your own words,
- formulate questions clearly, as briefly as possible,
- every question should correspond with one concept/idea,
- switch between True and False as correct answer - True and False as correct answer would be in 1:1 ration in a test approximately.

6.3 MATCHING TYPE QUESTIONS

When answering a matching questions, students choose correct answers for partial questions from a list provided. Questions like this can be prepared relatively fast, but students will need more time for answers.

When preparing matching questions you should avoid:

- long questions and long answers,
- mixing different types of answers (for instance mixing dates and names - a student will know immediately which group an answer to particular question belongs to),
- improbable answers (when the fact that the answer is wrong is clear from the first look).

What to do:

- Use clear and distinct instructions,
- the answers should be short and distinct,
- order the answers logically (alphabetically, or numbers from low to high etc.).

6.4 SHORT ANSWER QUESTION TYPE

When answering a Short Answer question, the students types in a short text (one or more words) in a window within their test. Online systems usually evaluate these questions automatically, according to the possible correct answers inserted by the teacher.

These questions are easy to create and as opposed to other types of questions, a student is not able to just guess the correct answer.

If you grade these questions manually, it would be faster than essay type questions (discussed below). If these questions are graded automatically, you need to insert all possible formats of correct answer.

Example

- There is a type of radioactive radiation that does not contain electrons or protons. How is this type of radiation called?
- Possible answers: Gamma, gamma, Gama, gama, Gamma radiation, gamma radiation, Gama žiarenie, gama radiation.

6.5 ESSAY TYPE QUESTIONS

Essay type questions require for student to provide a longer, more complex written answer (it could be a few words, few sentences or a few pages).



These questions are easy to prepare, you need to provide students with longer time to prepare an answer. It is possible to ask students to go deeper, to show that they really understand the point. However, these questions require manual grading, which takes time.

What to do:

- distinctly state what exactly should be included in the answer,
- announce how you will be evaluating the answers,
- provide students with sufficient time.

Example:

- Describe all phases of the cell division and what is going on during these phases. use your own words and include as many details as you can.

6.6. MULTIPLE CHOICE QUESTION TYPE

Multiple Choice questions are probably the most used type of questions in online tests. They consist of one basic question and multiple possible answers to choose from. One or more of the answers might be correct.

These questions are harder to prepare - you need to formulate the question correctly and to find some good false answers. Students usually don't need too much time for these questions and a chance for the to guess the answer correctly is of course much lower than with the True/False type of questions. In online systems Multiple Choice Questions are usually graded automatically.

What to do (general advice written according to Vanderbilt University (2021) and experience of authors):

- Ask students to select "the best answer", not "the correct answer" (sometimes the false answers might be partially correct).
- Use the language students are familiar with (the same terminology as you used for lectures or in the textbook).
- Don't use the same words in questions and possible answers (if it looks the same, student will select the answer subconsciously).
- Don't try to trick the students (if the students understand the problem, they should be able to answer all questions correctly, trying to trick them is unfair).
- Avoid negatives in questions if possible (students often don't notice a negative in question - if you can't avoid it, highlight it - "which of these elements **is not a part** of molecule of water?")

What to do (creating questions):

- Question needs to explain the whole problem (even without seeing answer options, the students should be able to answer the question).
- Include all relevant information into the question (there should not be a text repeated in all answers).
- Do not include irrelevant information into the question.

Example:

Radioactive radiation Gamma is one of the three types of radiation. What does the Gamma radiation consist of? (the first sentence is redundant).

- electrons,
- quants,
- protons.



What to do (creating alternative answers):

- Limit the number of possible answers (3-5 is usually enough. According to research, 3 options are as effective as 5 and more. Also, coming up with good alternative is not easy).
- Make sure that one of the answers is significantly better than the other ones (if all are partially right and the difference is small, the students will complain and they will be right).
- On the other hand, false answers need to be believable.

Example:

What does Gamma radiation consist of?

- cosmic radiation,,
- ping pong balls (unbelievable answer)
- quants.

The answers need to match the questions grammatically:

- Order the answers in a logical way (if there are numerical answers, or dates, have them in order).
- The correct answer should be randomly placed among the answers - not for instance to always be the 3rd one from top. (in Moodle and Forms systems it is possible to set random ordering of answers).
- Don't use the option "All of the above answers are correct" (you cannot use random ordering of answers and many students upon seeing the first correct answer will select it without reading the rest).
- Don't use the option("None of the above is correct" (again, you cannot use random ordering of answers and you are teaching the student just to recognize the wrong answer, not to learn the correct one).
- Resist using absolute terms like always, never, everything, nothing etc (only a very few things in life are absolut, this might indicate a false answer).
- Avoid using answers that overlap (if possible the answers should exclude each other).
- Avoid using questions like "Which of the following statements is true?" (you should rather use the True/False questions in such situation)..

CHAPTER 7

CONCLUSION

Assessment has always been and will be a part of our educational processes. With all different forms of assessment used, transferring it into online form has been a large change. Suddenly we learned that some things don't work or work differently in an online environment. One of the factors is a requirement for more time and effort on the side of teacher. It requires patience, creativity and preparation. This means that teacher needs to be aware how to approach assessment in online environment, how to use its advantages and how to avoid most problems. This is why methodology of assessment in online environment is so important. This guidebook will hopefully help teachers to be ready and to not lose sight of what is important. .

Summary of the most important issues concerning online assessment:



- It is not possible to completely prevent cheating. It is smart to count on it and to prepare your assessment as “open book” exams..
- Scaffold large tasks into smaller ones.
- Provide timely and detailed feedback.
- Use evaluation rubrics for assignments and provide them for students up ahead.
- Include peer-to-peer and self-evaluation.
- Use variety of evaluations in the same course.

We wish you all the best with your online teaching and assessment...



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