Strengthening Teaching Competences in Higher Education in Natural and Mathematical Sciences



Platform for peer assessment

GUIDELINE



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1. About the peer review platform

As part of the introduction of innovations in teaching, inspired by the TeComp project, a platform for peer evaluation was created. This platform is a software solution that allows professors to create questionnaires, divide students into groups where each student fills out a questionnaire created by the professor for each colleague from the group. In this way, students get the opportunity to practice assertively giving comments and suggestions to their colleagues, and also to learn how to accept and process the feedback they received. Students are free to express their opinion because giving answers is unnamed (anonymous), but the professor has the ability to monitor the process of work and giving comments, which ensures monitoring and suspension of inappropriate answers.

The peer review platform is available at http://evaluation.xyz. This instruction is primarily intended for teachers who would like to use this platform for the purpose of innovating their subjects, especially for working in groups and peer assessment within groups. Using the application is very simple, it is not necessary to install it, but it is accessed directly through the link previously mentioned. As access is very easy and simple, you can apply the application in educational institutions of all levels.

2. Opening an account and accessing the portal

Opening an account

Using the portal requires user registration. Credentials are defined by the portal administrator, who creates profiles for teachers on the portal. In order to open a teacher's account, the administrator must provide a username and e-mail address to which the user will receive all information related to activities on the portal. Creating a student profile does not require interaction with the platform administrator.

Teacher login to the portal

By accessing the portal at the address http://evaluationacija.xyz/login, a registration form opens in which you need to enter your e-mail address and password. During the teacher's first login to the portal, the password specified by the administrator is used, and after that the teacher can change the password.



In case the user has forgotten the password, by clicking on the *Request reset* link, the administrator can be requested to reset the password.

Student registration on the portal

In the previous part, it was explained how to create a teacher's account on the portal. The student can do it on the user registration page and no interaction with the administrator is necessary. The link to the registration page is http://evaluation.xyz/register or it can be reached by clicking on the Registration link on the login page. The form for registering a new user is very simple and is shown in the following image.

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Kreirajte nalog			
Unesite email			
Unesite lozinku			
Registracija			
/eć imate nalog? Prijava			

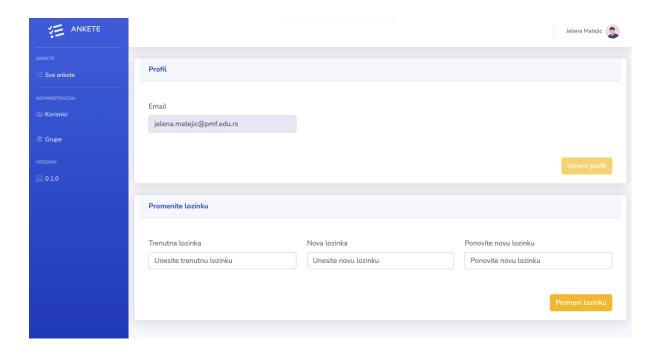
After successful registration, the user is redirected to the login page where needs to log in for the first time using the credentials which were used when the user created the profile. If there are any problems during registration or logging in, pay attention to the notifications in red bubbles next to the input fields.

Sign out, change profile and password

After successful registration and successful login, in the upper right corner of the application all users have a profile icon by clicking on which a drop-down menu opens. In the menu there are options *Profile* and *Logout*.

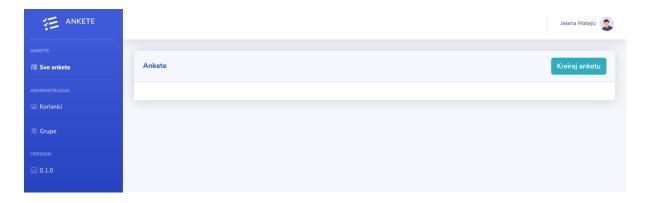
By clicking on the *Logout* option, the user logs out of the profile and is redirected to the login page, so the user can log in again.

By clicking on the *Profile* option, the view of the profile of the logged-in user opens. The user is not able to change the email address, but has the possibility to change the current password. For changing the password, the user has to first enter the current password, then determine a new password and repeat the same password for confirmation. By clicking the *Change password* button, a new login password is set. If there are any irregularities when entering the current password or selecting a new password, the user will receive a corresponding message on the screen.



3. Functionality of the teacher's panel

As mentioned earlier, teacher profiles in the application are created by the administrator. Teacher and student profiles provide different views and different opportunities. Of course, the teacher profile has a more complex structure and enables more operations and functions, compared to the student role. The next picture shows the appearance of the portal, with the teacher's role.



On the left side, you can see a menu with tabs:

- All Surveys Displays all evaluations that the logged in teacher has created so far
- Users Shows all students who have a profile in the application
- Groups Displays all student groups created by the teacher so far

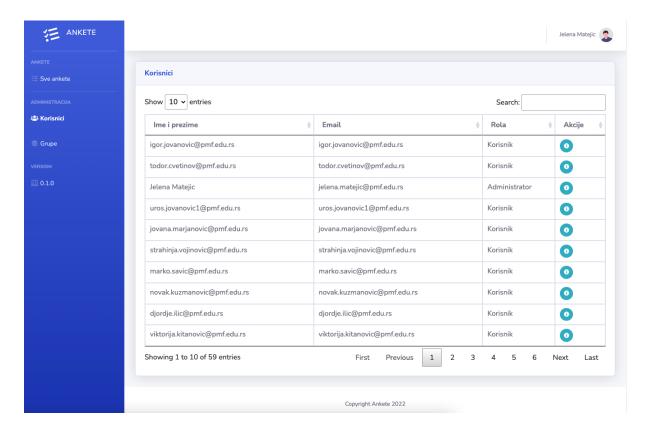
In the central part of the page, different screens are displayed, depending on which menu tab is selected. Below is an explanation of each of the tabs in the menu, as well as all the functionalities enabled by it. We will start first from the *Users* tab.

Users

When we select the *Users* tab in the vertical menu, in the central part of the page we get a view that represents a list of all users who have ever been named in the application. The data we have here are:

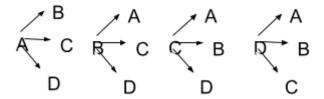
- *full name* unless the user specifies otherwise on his profile, the user's email address is displayed in the first and last name field
- email the address with which the user logs in to the portal
- role can be administrator, teacher or user (student)
- *actions* for now, the only available action is the display of all information about the selected user

As you can see, it is possible to display the desired number of rows in the table, we just need to enter the value in the *Show* ____ entries field. It is also possible to perform a search in the table by entering the desired text in the *Search* field.



Groups

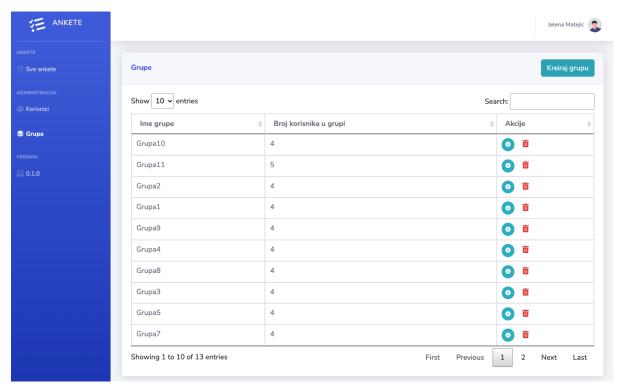
By selecting the *Groups* option from the menu, we get to an extremely important aspect of the application, which is the division of students into groups. This aspect is very important for peer review reasons, which was the motivation for creating the entire application. All students in one group should evaluate each other. If there are students A, B, C and D in the group, it means that each of them should rate all their colleagues from the group (except themselves). For example, student A will grade students B, C, and D. Student B will grade students A, C, and D, and so on. We can graphically represent it as follows:



You can see how the display looks when selecting the *Groups* tab in the following image. And here it is also possible to choose how many rows in the table we want to display, and it is also possible to search for groups according to certain criteria. What differs from the Users tab is the table view, where the following are displayed:

- Group name represents the name we assigned to the group when it was created
- Number of users in the group corresponds to the number of members the group has
- Actions
 - Information represents data about the members of the observed group where group members can be added/deleted
 - Deleting a group

Creating a new group is done by clicking the *Create group* button.



Each group we create must have its own name and its own users. Group users are added by clicking the *Add user* button, when the input field for entering the email address of the user we want to add appears. By clicking on the red bucket next to each new user, we can delete the added user. What is characteristic is that we can enter the email addresses of those users whose profiles do not exist in the database. This was created for the reason that sometimes the teacher wants that before the students create their profiles, i.e. before they register, already form groups and assign tasks. The teacher does not have to wait for all students to register to form groups, but can do it in advance.

Therefore, something like this is possible, and when registering a user with the e-mail address provided by the teacher, the user will see the groups he is in on his profile.

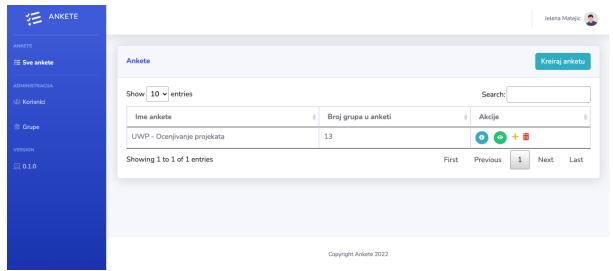
When we click the Create button, the group is created and it is in the groups table.

If we click on the Close button, we stop creating the group and the action is suspended.

lme grupe	
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Korisnici	
Email korisnika	
Unesite email	■
	Dodaj korisnika
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All evaluations

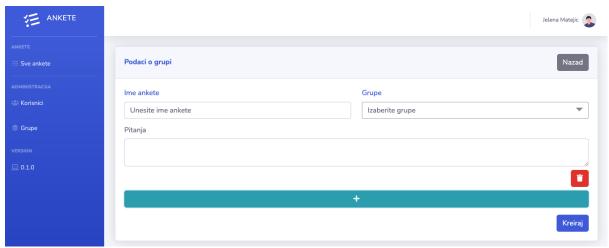
Surveys represent forms that students should fill in within their groups, and on the occasion of peer evaluation. Creating questionnaires is a functionality enabled only for those users who are registered as lecturers by the administrator. Users who have registered themselves on the portal automatically receive the role of student and they do not have the option to create questionnaires. The layout of the platform is very simple and can be seen in the upcoming image.



Questionnaires are intended for creating a series of questions, where each question can be answered exclusively with open text (there are no additional possibilities for multiple selection, YES/NO questions,...). Creating a new survey is achieved by clicking on the *Create survey* button, located in the upper right corner. In this way, we create an empty poll that needs to be assigned:

- Survey name The name by which we want to remember our survey
- Groups From the drop-down menu, you should check all the groups to which we want this
 survey to be assigned. To make it easier to find the desired group, there is also a search field
 in which the desired text can be entered. We can also select All groups, which will assign the

- survey to all existing groups in the database. Please note that a group must first be created before we can assign a survey to it.
- Questions Each question is added by clicking the + button. On this occasion, a text entry field is created where you only need to enter the text of the question. As all questions are open-answers, there is no possibility to select different types of answers to the question. By clicking on the bucket, next to the corresponding question, the question will be deleted from the survey. When we have finished creating the survey and when we have added all the desired questions, we can click on the button Create with which the survey is created, it is visible in the survey table and assigned to all the selected groups (all users who are in the selected groups will see on their profiles that they should fill out this survey). If we select the Back button, the questionnaire will not be created and everything we created in it will be canceled.



As for the display of the survey in the table of all surveys, this display is somewhat more specific compared to those we have encountered so far and contains the following columns:

- Name of the survey the name under which we remembered the survey
- Number of groups in the survey how many groups have access to this survey
- Actions
 - Information displays all responses to the survey, from whom the responses came and to whom they were addressed. This view is organized by questions, so the first question is listed first, followed by all answers to it. Then the second question and all answers about it and so on.
 - View displays all responses to the survey, but without showing from whom the responses were received and to whom they were sent. In this case too, the review is organized by questions.
 - Add allows you to add a survey to a group
 - o Delete deletes the poll

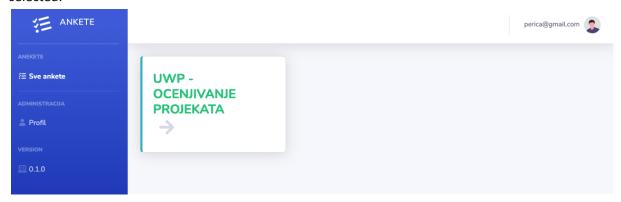
4. Functionalities of the student panel

It was already mentioned earlier that students can register and apply independently. Teacher and student portals provide different views and different possibilities. The student portal has a less complex structure, which makes the portal very easy to use. The next picture shows the appearance of the portal, near the student roll.

On the left side, you can see a menu with tabs:

- All Surveys Displays all surveys that the logged in student has to fill out
- *Profile* The same page that we encountered on the teacher's profile, and it allows changing the password that the user uses

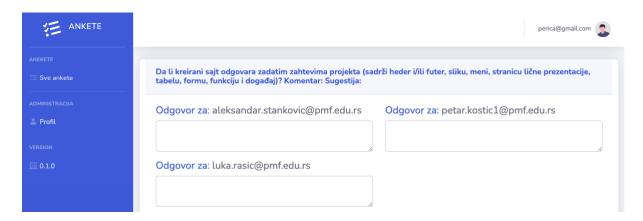
In the central part of the page, different screens are displayed, depending on which menu tab is selected.



Peer assessment

By selecting the *All Surveys* tab in the menu, the central part of the page gives us a view of all the evaluations that the logged-in student needs to fill out. In the previous image, one such evaluation is available to the logged-in student, which is called *UWP - project evaluation*.

When a student opens an evaluation that needs to be filled out, a series of evaluation questions are opened, which need to be answered. For each question, the student gives as many answers as there are colleagues in his group. So, if there are students A, B, C and D in the group, student A will provide comments for each question for students B, C and D. In the following image you can see that the logged-in user should comment for three of his colleagues on the first question. The e-mail address of each colleague to whom he gives a reply is listed, and below it there is a field for entering the text of the reply. All answers are in free text form and there is no limit to the number of characters for the answer.



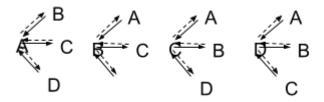
When the logged-in user has given all the answers in the evaluation, he can click on the *Send* answers button, which is located at the bottom of the survey, thus indicating that he has finished

evaluating the work of his colleagues. Answers that are sent once are considered final and cannot be changed later.

Processing and evaluation of received feedback

When one of the students fills out the evaluation and sends the answers, each of the colleagues from his group receives feedback that is intended for him/her. Therefore, if user A rated users B, C and D (with whom he was in the group), co-user B will receive answers intended for her/him, the same applies to users C and D that they will receive answers intended for them. When users get answers, they are anonymous ie. they don't know which team member gave them the answers. In this way, we achieve anonymity among the team members, and the giving of better and more constructive comments is promoted. We note once again that the teacher who assigned the evaluation has insight into all the answers, to whom they are addressed and from whom they were received, so that he can control and regulate potential irregularities.

When receiving feedback, the student has the right to respond to it, even though does not know from whom he received the suggestion. The answer confirms that the comment/suggestion is in place or refutes the given suggestion. This approach strengthens introspection and self-evaluation in each of the team members. If we imagine a four-member group of students A, B, C and D, the following picture shows all the interactions that these students perform with each other during peer assessment. Solid arrows represent giving comments/suggestions on colleagues' work, while dashed arrows represent a feedback response to a comment/suggestion received. The teacher should monitor all these interactions, for each of the groups, so that the peer assessment is most effective.



5. Conclusion

Peer evaluation is extremely important for strengthening critical thinking, the opportunity to learn the process of evaluating one's work, as well as to acquire the skill of giving comments and suggestions in an appropriate manner. Also, this is a skill that is necessary in daily work in a team, and it is very useful to practice it during school days. On the other hand, the ability to look at one's own work, accept suggestions and respond to them is strengthened. To all teaching staff who need to implement this approach in their work, get a completely new dimension of looking at student projects, encourage students to be active participants in the work, I recommend that they try using this very simple platform that can be found at the link: http://evaluation.xvz.



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