

Manual

1. Installation of an external application in Android

First the application (Package/LVRE/LTVRE-arm64-es2.apk or Package/TVRE/LTVRE-arm64-es2.apk) has to be copied to the android device. The fastest way is via an USB connection. After copying the security settings must be changed that applications outside the Play Store can be installed. The option “Unknown sources” (Allow installation of apps from sources other than the Play Store) has to be enabled. After this open the file with a file explorer app and install it. A detailed guide is in the followed link:

<https://www.cnet.com/how-to/how-to-install-apps-outside-of-google-play/>

2. Create lesson (single player, teacher version, TVRE)

The user can change the name by touching the text field (Image 1) in the main menu.

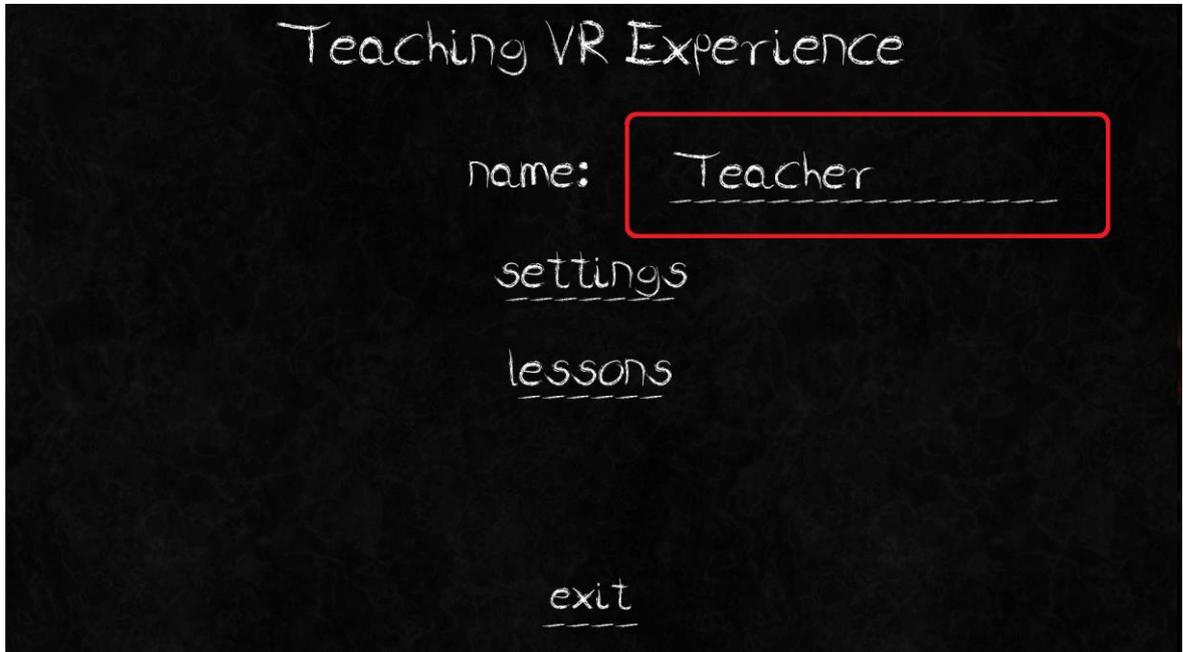


Image 1: change name

By touching the settings button (Image 2) the settings menu will open. In the settings the volume of sound and music and the graphic level can be changed by touching the letters (Image 3). The letter 1 stands for very good or loud and the letter 6 for bad or quiet. By touching the back button, the main menu opens.

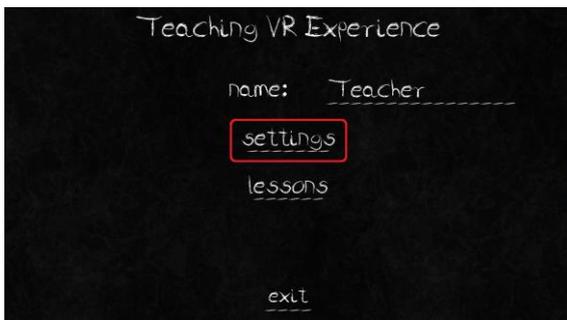


Image 2: settings menu button

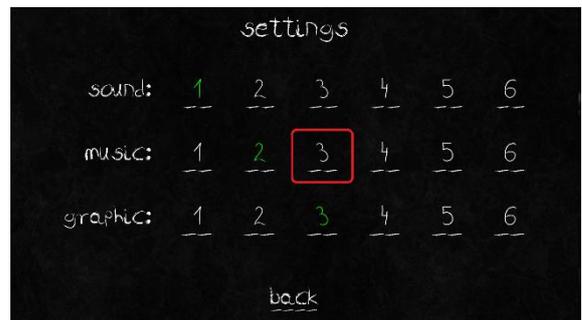


Image 3: settings menu

With the lessons button in the main menu (Image 4) the lessons menu opens and in there can the question menu (Image 6) reached by touching the question editor button (Image 5).



Image 4: lessons menu button



Image 5: question editor menu button

In the question editor menu is a list with all created questions (Image 6, List of questions). By touching one of them it can be marked. The marked question can be edited at the right side of this menu. A marked question can be deleted with the delete button. A new question requires at least the question (Image 6, question text field and the first answer (Image 6, answer 1 text field). The notice (Image 6, notice text field) and the answer 2 to 3 are optional. The lessons menu (Image 5) opens again by touching the back button.

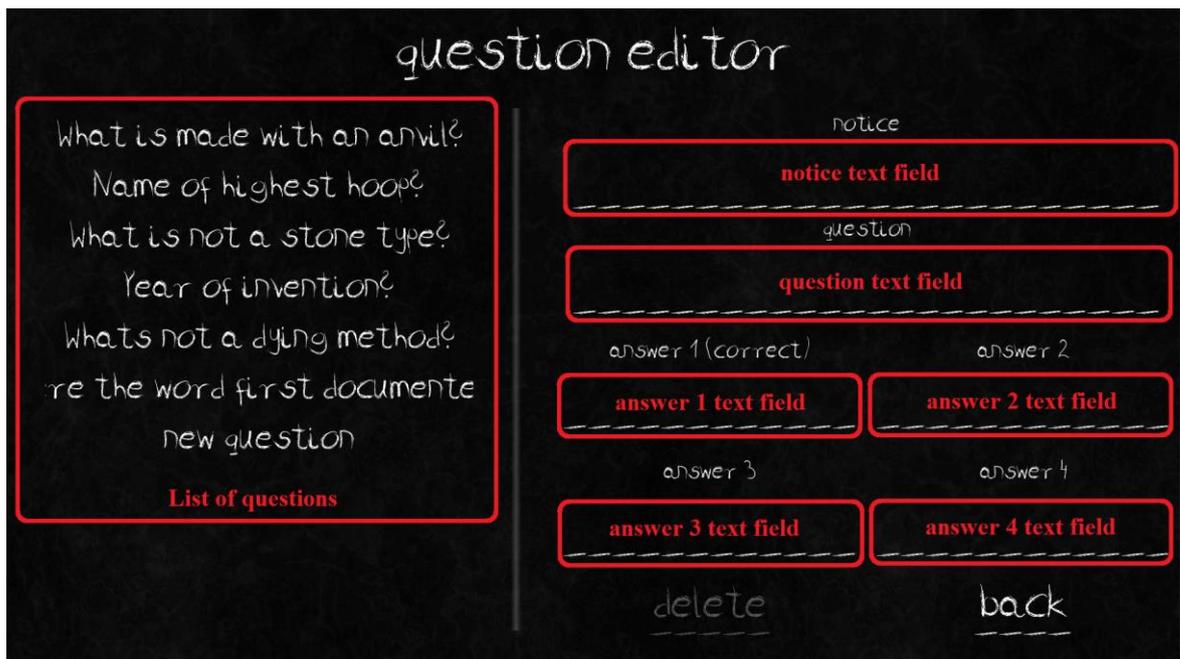


Image 6: question editor

The object editor button in the lessons menu (Image 7) opens the menu for creating, editing and deleting object groups (Image 8). An object group can be marked by touching one of the groups from the list on the left side in this menu (Image 8). The marked object group can be edited (edit object button) and deleted (delete object button). A new object group can be created by touching the new object button.



Image 7: lessons menu object editor button



Image 8: object group editor menu

With creating a new object group, editing or deleting an existing group, the object group details editor menu opens (Image 9).



Image 9: object group details editor menu

The background of the object group can be chosen by touching one out of the list (Image 9, object group background). By doing so, the place where single objects can be placed (Image 9, place able object spot) are set. By touching a single object from the list of objects (Image 9, object), it is marked. If the user touches a place able spot and a single object is marked, the single object will be placed in the location. A name (Image 9, name text field) is required to save the object group. By touching the question button (Image 9), the object group question editor menu (Image 10) opens.



Image 10: object group question editor menu

A question can be assigned to a single object in this menu. A single object (Image 10, object) must be marked by touching first. Than a question has to be marked by touching one from the list of questions (Image 10, list of all questions). By touching the back button, the object group editor menu opens again. With the save & back button in this menu (Image 9) the object group will be saved and the object editor menu opens. With the back menu in that menu (Image 8), the lessons menu (Image 11) opens again.



Image 11: lessons menu lesson editor Button



Image 12: lessons editor menu

The menu for creating and editing lessons (Image 12) can be opened by touching the lesson editor button in the lessons menu (Image 11). In the lessons editor menu (Image 12) is on the left side a list with all lessons. A lesson can be marked by touching them. The marked lesson can be edited (edit lesson button) and deleted (delete button). A new lesson

can be created by touching the new lesson button. By creating a new one or edit an existing lesson, the lesson editor details menu (Image 13) opens.



Image 13: lesson editor details menu

On the left side in this menu is a list with all available maps (Image 13, list of maps). By touching on one of them, the placeable object group spots (Image 13, placeable object group spot) will be created. On the right side is a list of all created object groups (Image 13, list of all object groups). Touching one of them sets the object group to marked. If an object group is marked and a placeable object group spot is touched, the marked object group will be set to the touched location. The lesson can only be saved if a name is given (Image 13, name text field). It's possible to change the category of this lesson (Image 13, category dropdown) and the availability (Image 13, availability dropdown). The options for the availability are "Invisible" (lesson not visible), "Visible" (the lesson can be practiced and the objects are visible, but no notice or question are available) and "Answerable" (notice and question visible and can be answered). With the save & back button from this menu, the lesson will be saved and the lessons editor menu opens again. In the lessons editor menu (Image 12) is now the created lesson in the list of all lessons.

3. Practice lesson (single player, student version, LVRE)

The student version has the opportunity to practice a lesson alone. Before the user can do this the lesson has to be released from the teacher. To practice a lesson, the lesson has to be marked, by touching it, from the list of all lessons (Image 14, list of all lessons) and then started by touching the practice lesson button (Image 14).



Image 14: lessons menu student practice lesson

After the level was loaded the user can look around. All objects from the lesson are visible. If looking long enough (till the circle in front of the user closes) at an object (Image 15, object), the widget (Image 15, question widget), for showing notice, question and answers, can be shown.

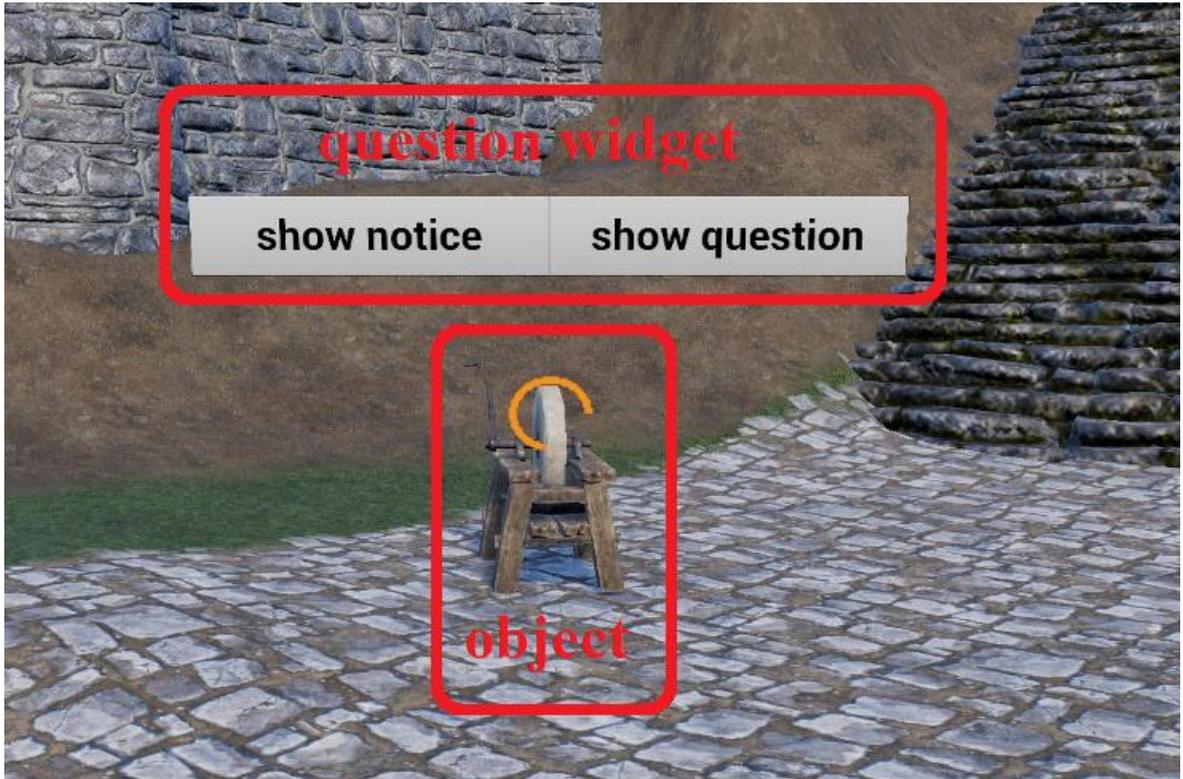


Image 15: show question widget practice

After the widget was made visible, the notice (Image 16, notice) can be shown by looking long enough at the notice button (Image 16, notice button).

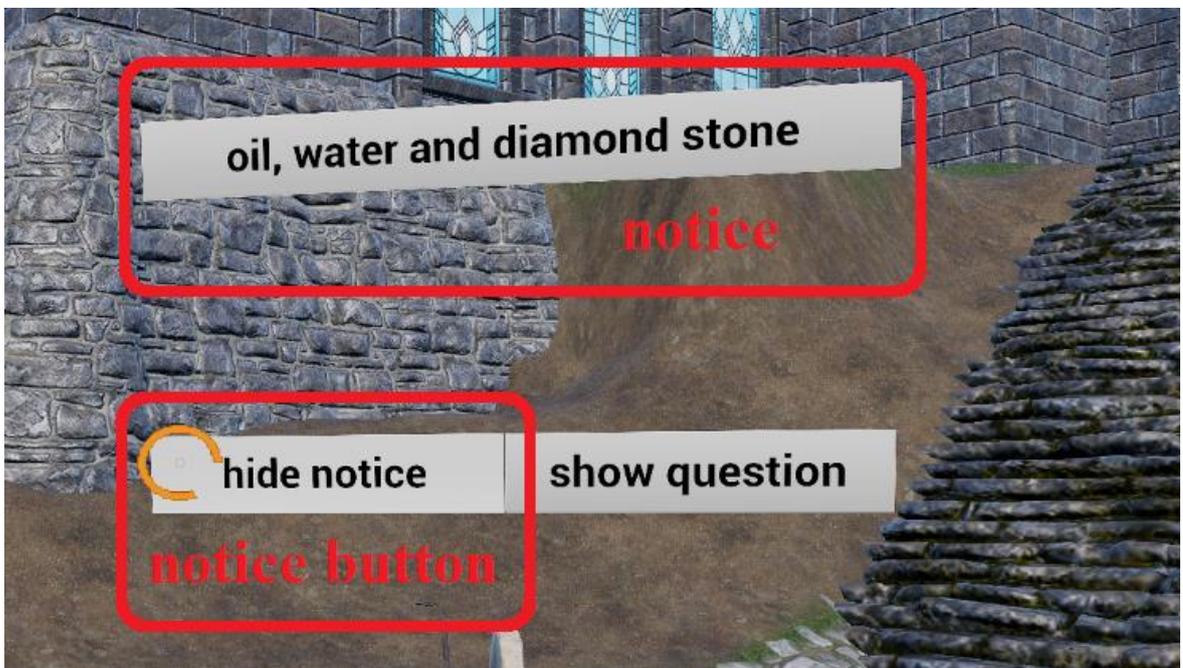


Image 16: show notice practice

To show the question and the answers (Image 17, question), the user has to look long enough at the question button (Image 17, question button).

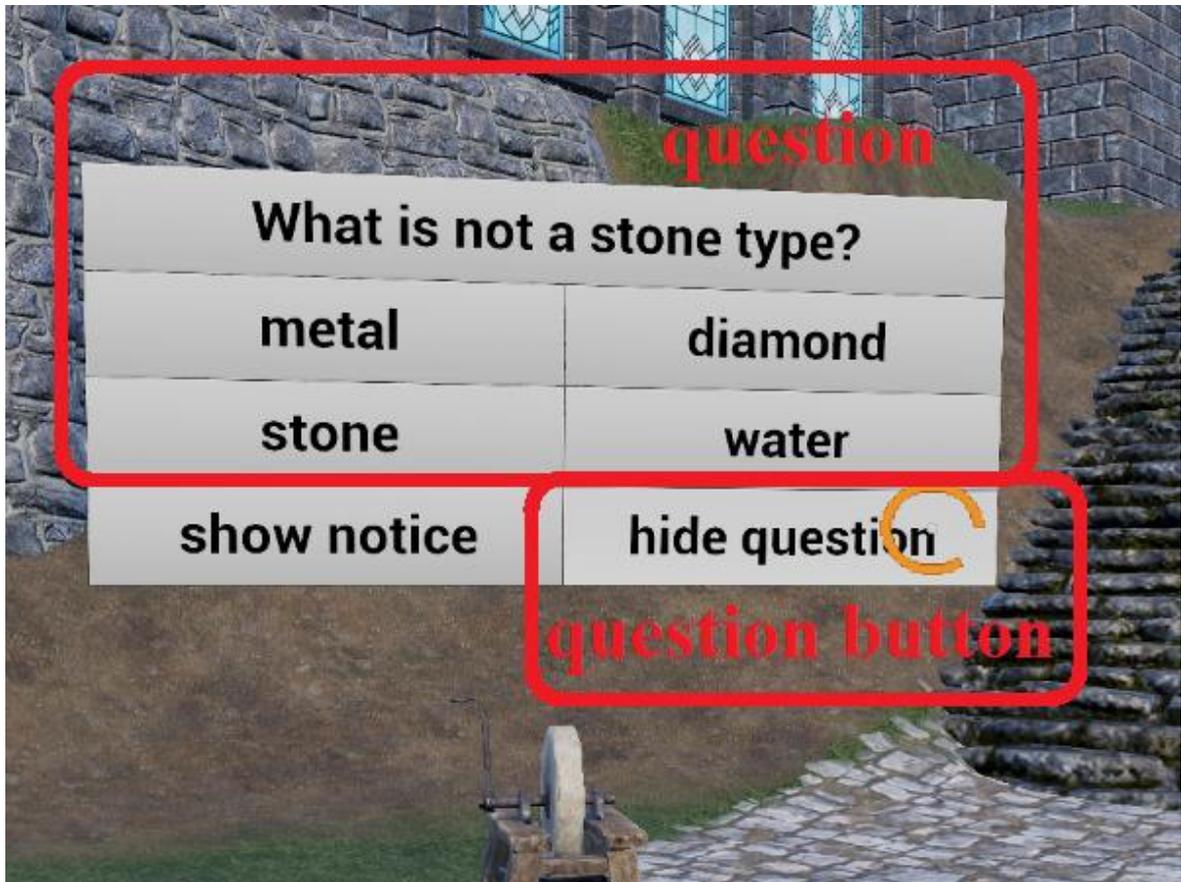


Image 17: show question practice

If the user is looking long enough at an answer (Image 18), the question will be answered. By giving the right answer, the background of the button changes to green. If the question was answered wrong, the given answers background changes to red and the background of the right answer to green (Image 18).

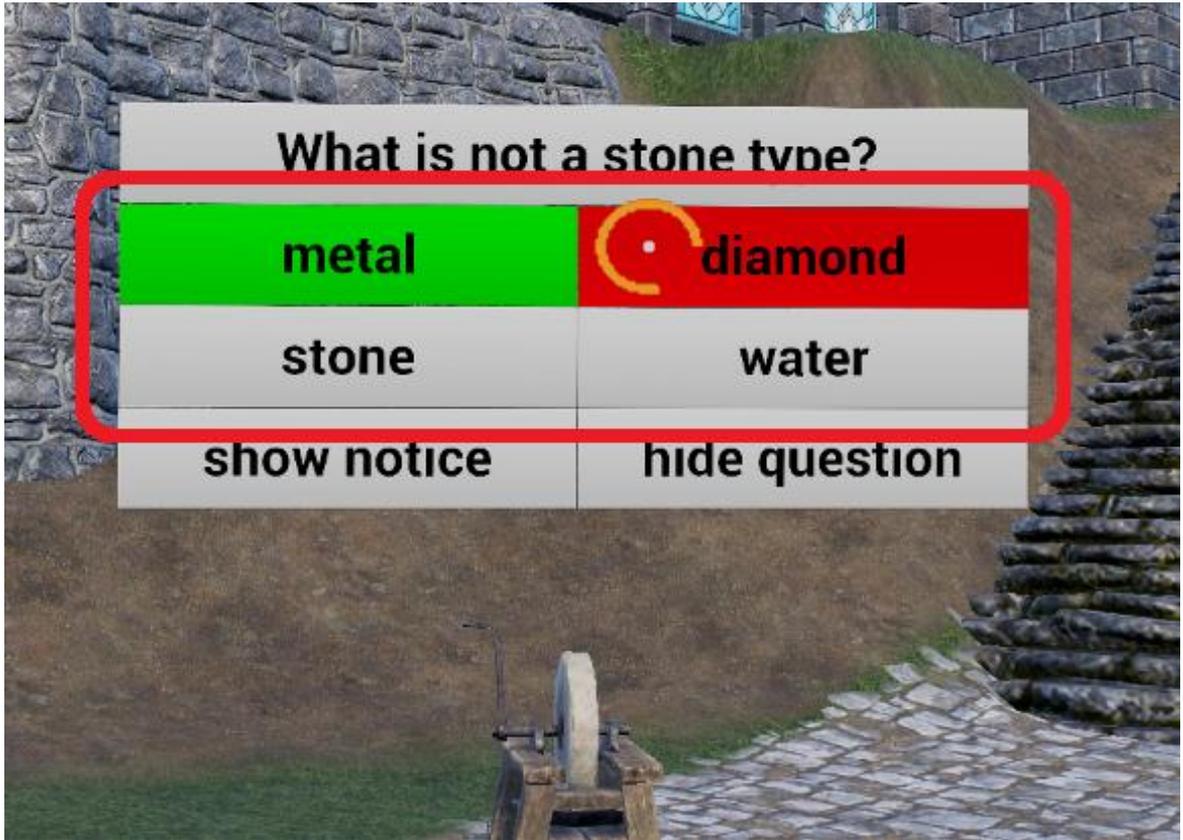


Image 18: answer question practice

Going back to the menu and exiting the practice is done by looking long enough at the ground below the user (Image 19).

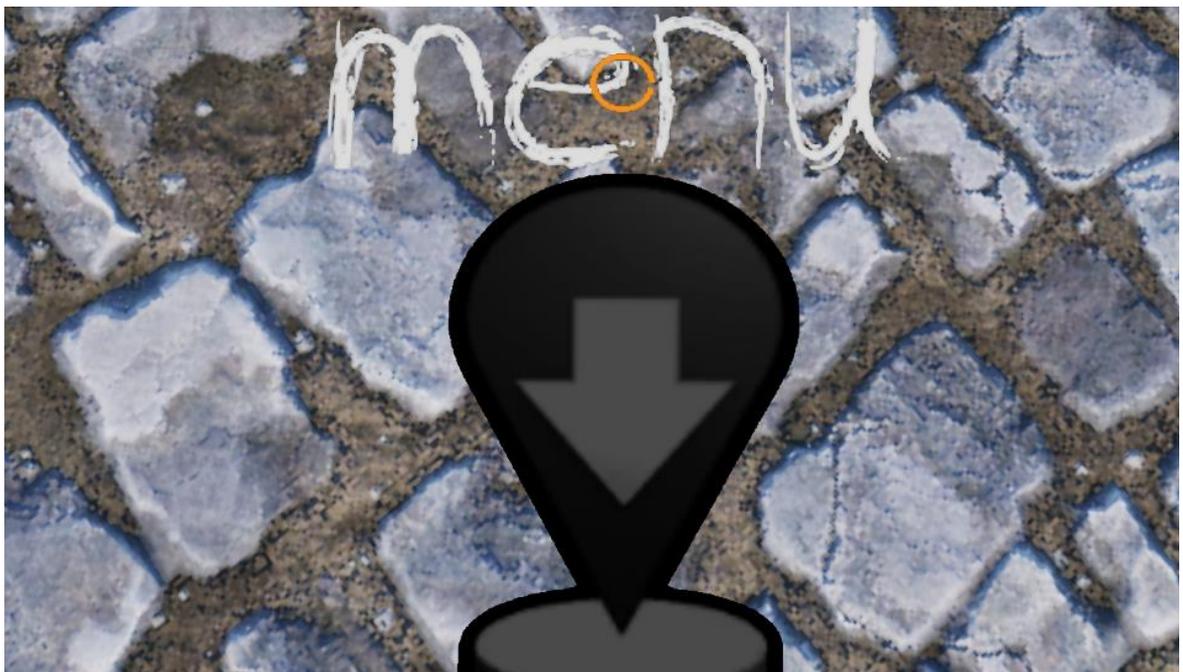


Image 19: exit practice

4. Start lesson (multi player, teacher version, TVRE)

To start a lesson, the teacher has to mark one of the lessons out of the list of all lessons from the lesson menu (Image 20, list of all lessons). To start the marked lesson, touch the start lesson button (Image 20).



Image 20: start lesson teacher

5. Join lesson (multi player, student version, LVRE)

Before joining a lesson, the list of all lessons (Image 21, list of all lessons) must be updated with multi player lessons (**the users must be in the same network, not online**). To find lessons touch the find lesson button (Image 21). During the search, the circle beside the button is rotating. If a multi-player lessons was found, it is marked with „Live“ after the name of the creator. This lesson can be marked by touching at it. Joining the marked lesson is done by touching the join lesson button (Image 21).



Image 21: join lesson student

6. Teach lesson (multi player, teacher version, TVRE)

The teacher sees all objects at all times. To show the question widget (Image 22, question widget) the user has to look long enough at the object (Image 22, object).

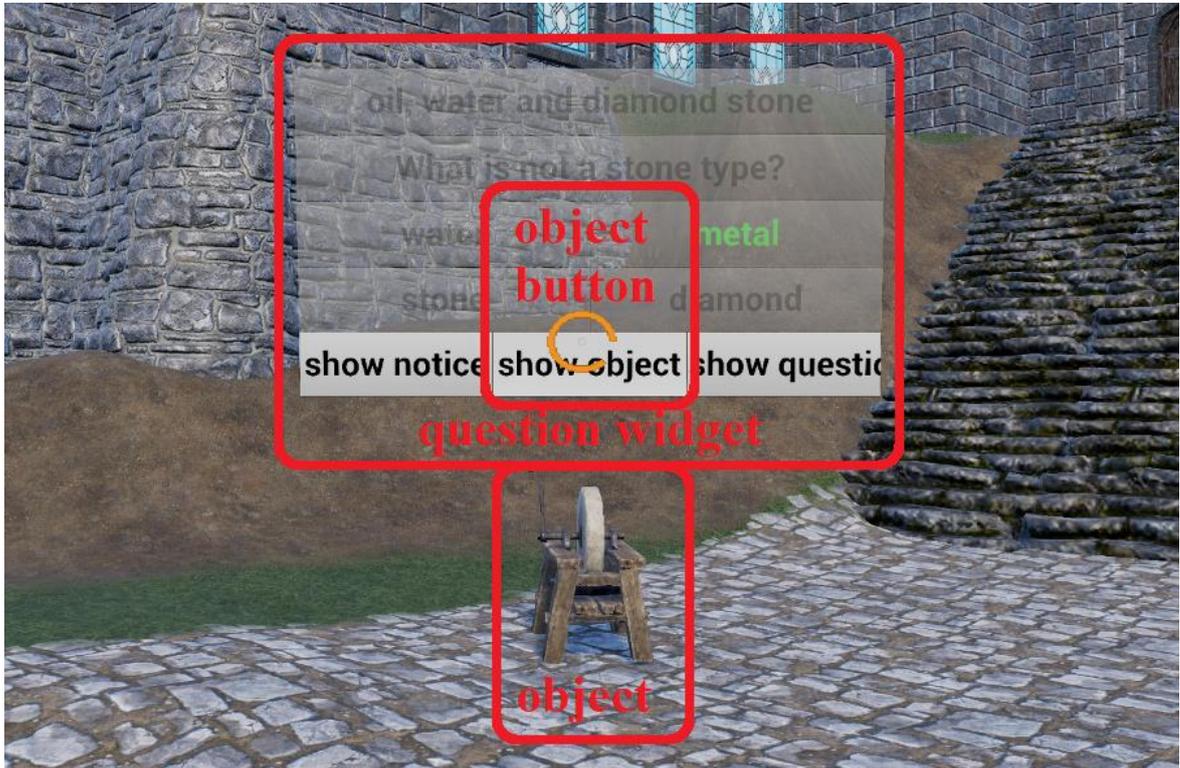


Image 22: show question widget teacher

The object can be made visible for the students by looking long enough at the object button (Image 22, object button). These buttons always show if the object, the notice or the question is shown to the students or not. The notice and the question are transparent for the teacher if there are not visible for the students. The notice can be visible for the students by looking long enough at the notice button (Image 23, notice button) and the question can be made visible with the question button (Image 24, question button).

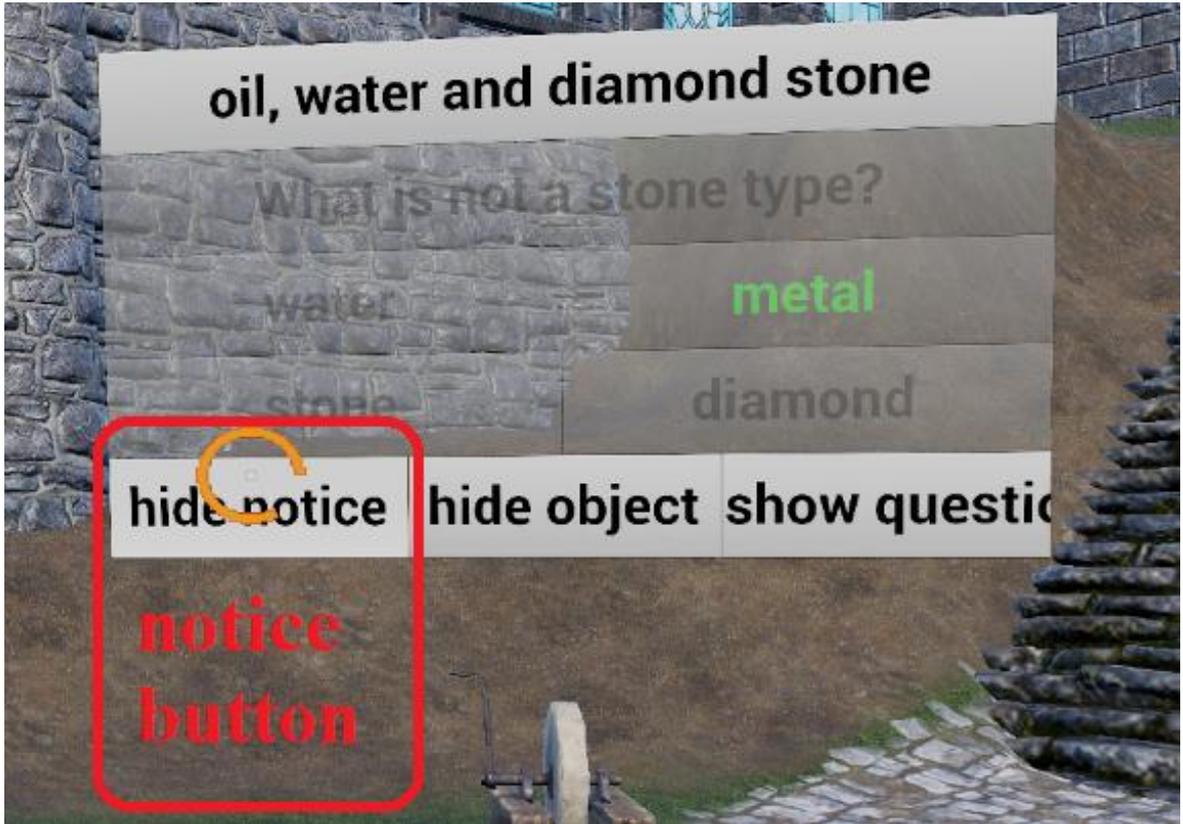


Image 23: show notice teacher

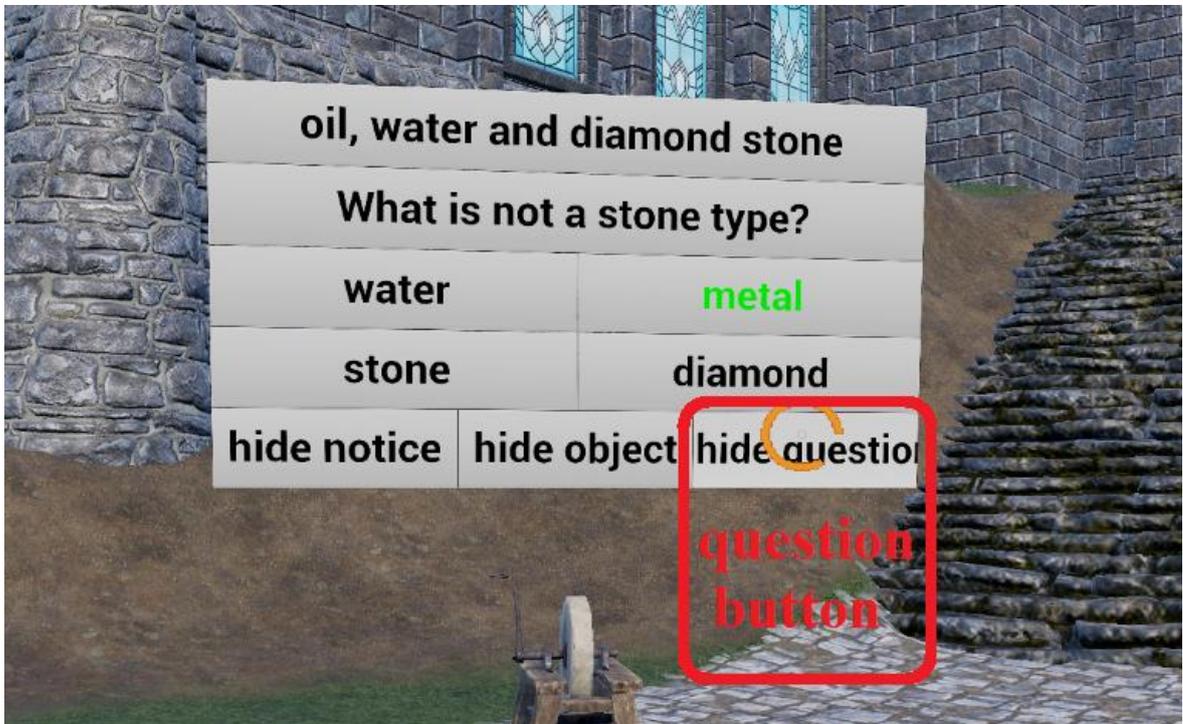


Image 24: show question teacher

If a student answers to a question, the teacher sees that by the given answer is written under the name of the student. If the answer was right, the text is written in green font and if not in red. To show the students to correct answer the teacher has to look long enough on the question (Image 25). If the correct answer is visible for the students the question is written in green font at the teachers question widget (Image 25).

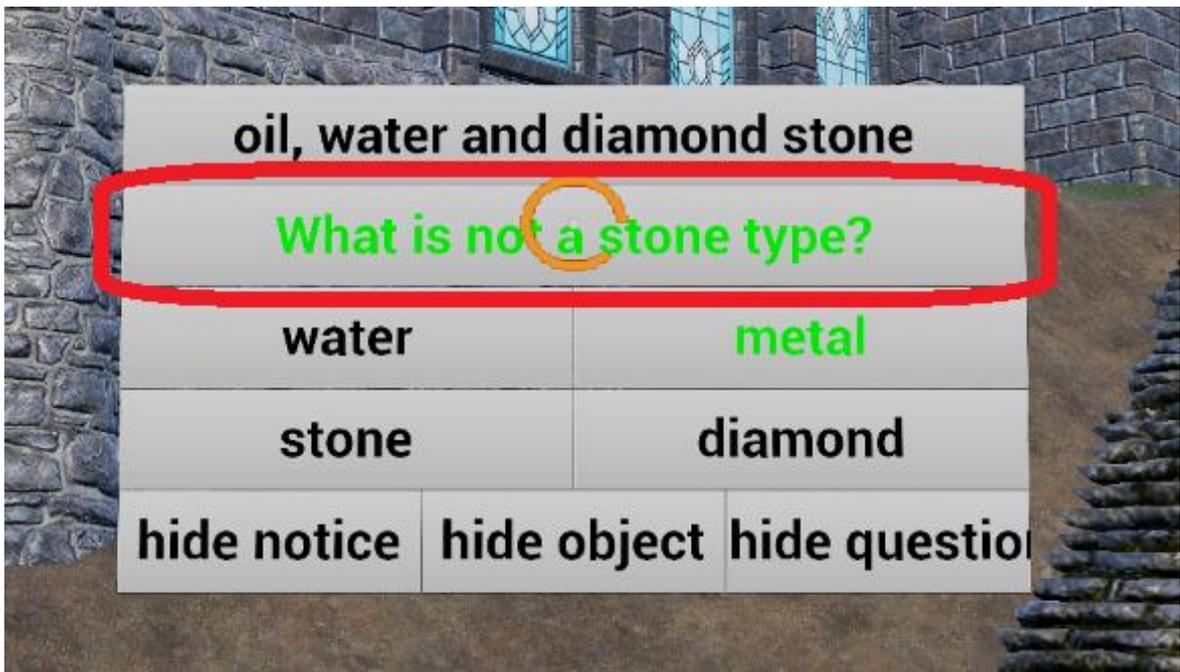


Image 25: show correct answer teacher

To exit the lesson and get back to the menu, the teacher has to look long enough at the ground below (Image 19). With doing this, the lesson is given to the connected students.

7. Experience lesson (multi player, student version, LVRE)

The student can look around and sees the visible objects. The notice and the question with the answers are only visible if the teacher released them (see chapter 6). If the question is visible, the student can answer that by looking long enough at one of the answer buttons (Image 26). The background of the chosen answer changes to yellow to show the student that this is his given answer (Image 26).

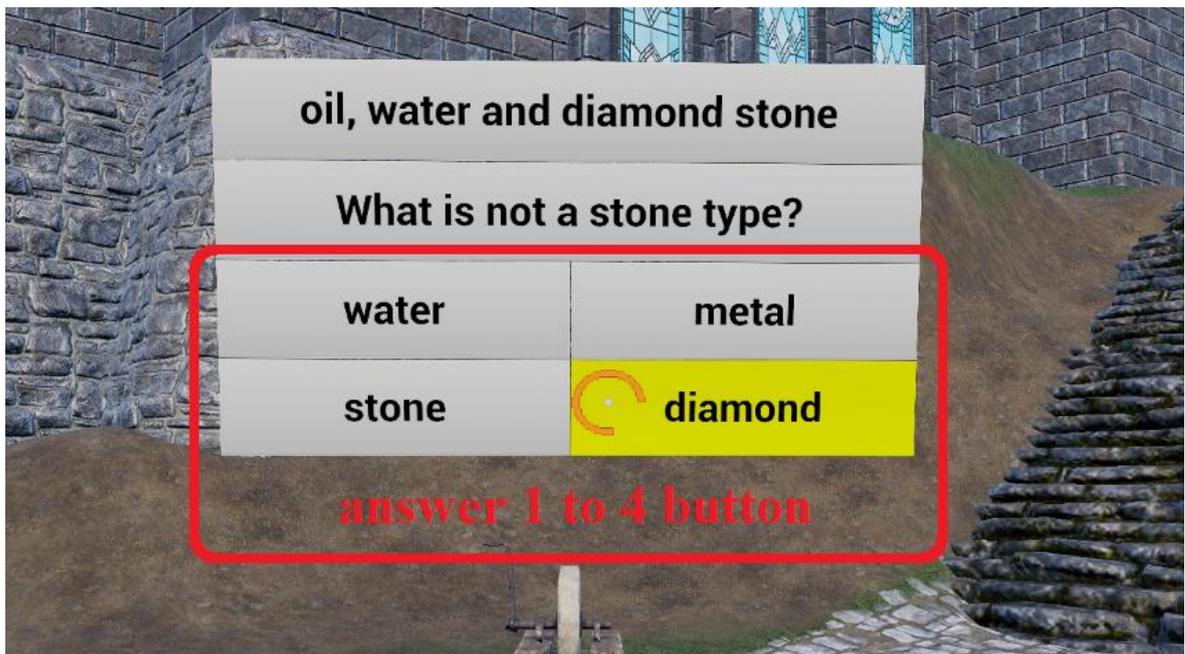


Image 26: answer question student

If the teacher set the correct answer free it will be shown to the students (Image 27, teacher view). If the student has given the correct answer, the background of the answer changes to green. But if it was the wrong answer, the given answer changes to red and the right one's background changes to green (Image 27, correct answer shown). To get back to the menu the student has to look down long enough at the ground below (Image 19).

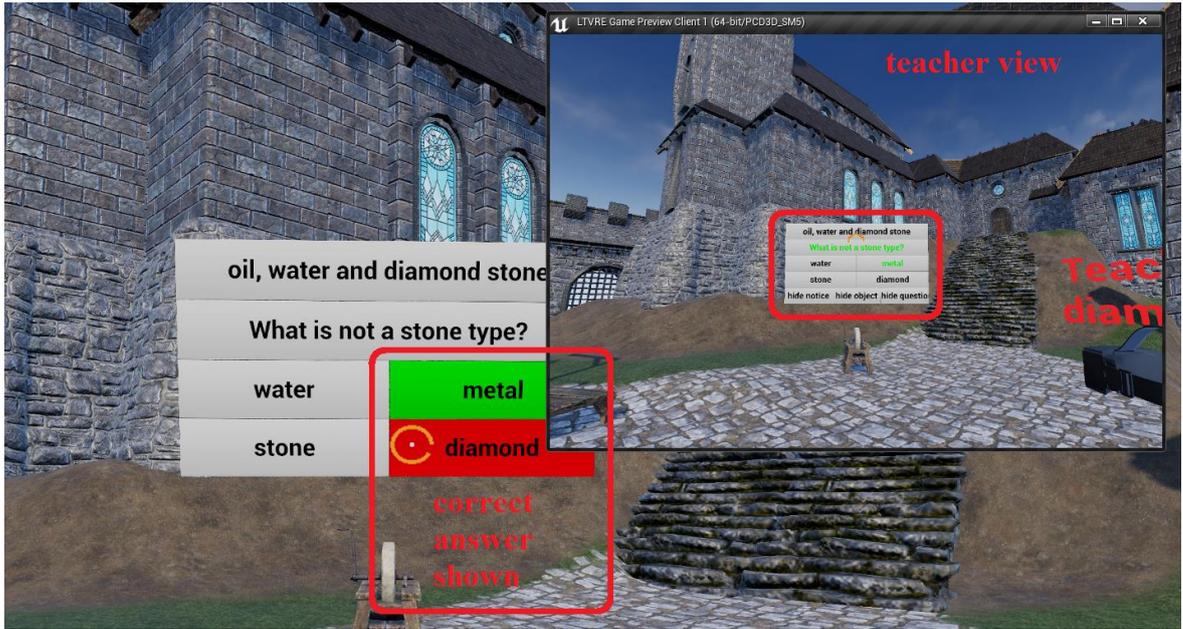


Image 27: correct answer student