ELICITING PRIOR KNOWLEDGE in remote/online settings
IN-DEPTH ANALYSIS

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This document has been created to provide teachers at all levels with a resource to inform the design of aspects of remote/ online teaching that call for eliciting students' prior knowledge. While some of the insights and considerations included in this document are specific to remote/ online settings, most are more general and applicable to face-to-face learning contexts as well.

Please note that the considerations and options identified here are not intended to be comprehensive, but rather are offered as a starting point. Therefore, we invite you to "personalize" the analysis provided here by adding your own insights as well as eliminating options less relevant to you and substituting them with new ones you have identified as more valuable for your context. You can capture these changes by downloading and editing this Word file – as this is an open source document you are allowed to use and modify, provided you cite its original source.

The best way to get better at this practice, though, is to reflect on the decisions you make and their implications as you implement it. To help you keep track of your instructional decisions when "Eliciting Prior Knowledge", on our webpage you can find a template to structure a Reflective Journal specific to this practice.

Introduction

Research on how people learn has pointed out the importance of building on students' prior knowledge - but eliciting that knowledge may be challenging, especially if you are teaching remotely and cannot easily observe students' reactions or ask impromptu questions. On the other hand, online tools can provide powerful new ways to both elicit and record your students' prior knowledge, which will be useful regardless of your teaching context.

Potential benefits of *Eliciting Prior Knowledge* we want to maximize:

- Helping students activate relevant prior knowledge and be more ready to use/build on that knowledge for a learning activity
- Enabling each student to benefit from other peers' prior knowledge
- Helping teachers identify common misconceptions, and thus better plan instruction that can address them
- Helping teachers identify common misconceptions, and use them to create surprise that may increase students' interest in the topic
- Helping teachers identify students who may need additional support/ scaffolding

Potential challenges (and how they may be reduced):

- Students may try to tell the teacher what they think s/he wants to know:
  - *Elicit prior knowledge at the very beginning of a module, before introducing any related content*
  - *Word your prompts carefully to avoid "leading questions"*
  - *Don't assign grades to tasks intended to elicit prior knowledge*
  - *Keep replies anonymous*
- Students may not feel "safe" about sharing their prior knowledge
  - *Don't assign grades to tasks intended to elicit prior knowledge*
  - *Keep replies anonymous*
  - *Set conducive classroom norms and develop trust through initial low-stakes activities*

Other things to consider:

- The way you choose and word your prompts will be critical to the success of the activity
- Creating a record of the prior knowledge elicited is valuable, as it will allow students to revisit it at the end of a module/unit, and thus be able to recognize and better appreciate what they learned as a result of that module/unit

Key instructional decisions to be made – *along with possible options and their pros & cons*:

WHEN to elicit students' prior knowledge:

Option:	Advantages	Limitations
Prior to the relevant task	• Gives time to the teacher to process the information thus gathered, and possibly make changes in his/her plan if needed • Doesn't take up class/ synch time	• "Activation" of relevant prior knowledge will be less immediate
At the beginning of a task (as part of the task itself)	• Allows the student to immediately activate (and use) the relevant prior knowledge • May feel less like an assessment and more as part of the learning process – and thus help with "safety" concerns	• Gives little time to the teacher to make adjustments in his/her plan if needed

Level of PRIVACY:

Option:	Advantages	Limitations
Individually and publicly shared	• Students will benefit from each other's prior knowledge • Instructor will know individual students' responses • Some students may take the task more seriously	• Some students may not feel "safe" • Some students may try to tell what they think the teacher wants to hear
Privately shared with instructor only	• Some students may feel "safer" by not having to share with peers • Instructor will know individual students' responses • Some students may take the task more seriously	• Some students may still not feel "safe" • Some students may try to tell what they think the teacher wants to hear • Students will not benefit from each other's prior knowledge
Anonymously shared	• All students will feel "safe" • Students will benefit from each other's prior knowledge	• No accountability on the part of individual students • Teacher will not be able to know where each student is
Not shared with anyone	• All students will feel "safe" and will be most honest • It will still allow each student to activate relevant knowledge	• Teacher will not be able to learn from it • Students will not benefit from each other's prior knowledge

RECORDS to be created:

Option:	Advantages	Limitations
Individual	• Each student can late revisit his/her own starting point • Teacher can revisit each student's record, and use it as a baseline for assessing what the student learned	• May take extra time for each individual student • May feel more intimidating to students
Collective	• Can be revisited at the end to see how the class as a whole progressed • When using certain online tools, it may take little time to create such record	• Cannot be used to evaluate individual learning by either teacher or student • May take some extra time and effort during the activity (but likely not much)
None	• Takes the least amount of time • Feels "safest" for the student • Can still activate prior knowledge	• Neither teacher nor students have a record to revisit later

Useful online tools:

- **Learning Management Systems (LMS):** Learning Management Systems (such as Schoology, Google Classrooms, Canvas, Blackboard) has built-in functions that allow students to:
  - submit an electronic copy of their work that it is accessible just to the instructor; this ensures each student's prior knowledge to remain *private,* while also automatically creating an *individual record* that both teacher and student can revisit later;
  - take an online quiz or test – which can once again be *shared only with the instructor*, while also creating an *individual record;*
  - post their work in a discussion boards, so it can be *publicly shared,* while also creating an *individual record.*

  In most cases, LMSs allows for posting multiple types of artifacts in addition to typed text (including videos, voice recordings, digital photos, etc.).

- **"Sharing" apps:** Even if your institution has not invested in a Learning Management System, there are stand-alone apps (such as *Padlet* and *Flipgrid*) that allow students to post their *individual* reflection, journal, or other artifact, in a kind of online discussion board - so they are *publicly accessible* to the rest of the class, and can be revisited later. In addition to written text, students may be given the option to post a short video or voice message.

- **Online surveys:** Using an online survey (whether within a Learning Management System, or through stand-alone apps like *Survey Monkey*) will allow you to collect students' responses to questions eliciting prior knowledge in a way that allows *anonymity,* as well as easy and quick ways to get a *collective* record. Depending on the system, as the instructor you may or may not be able to also access individual student responses.

- **Electronic polls:** There are a number of electronic polling tools available (such as *Poll Everywhere,* or features built in synchronous session platforms such as *Zoom*) that will allow you to quickly set up an *anonymous* poll during a synch session, have students respond in the moment, and then quickly create a *collective* record that can be immediately shared with students.

- **Platforms allowing for synchronous sessions:** Platforms like *Zoom* or *Google Meet* allow students to share their prior knowledge orally during an online class session – even within a smaller group (thus providing a higher level of privacy than sharing synchronously to the entire class) if the platform allows for break-out rooms. *Collective* records of the sharing could be kept by having a note-taker posting notes in a Padlet or Google doc.

- **Assessment tools:** There are a number of apps (like *Kahoot* and *Quizzlet*, just to mention a few) that allow the instructor to easily set up online quizzes and tests, and then create a collective summary of responses that can be shared with the class. These tools can also be used as a form of pre-test to elicit student prior knowledge, with the added advantages of being able to share information about students' prior knowledge *anonymously,* create a *collective* record that be revisited later, and also have an *individual* record for the instructor to evaluate.

Options worth considering
(S=synchronous session or F2F; A=asynchronous online or regular homework):

Option:	Considerations	A	S	Useful online tools
A. *Anonymous online survey (beginning of unit)*	• Every student will respond individually, and thus have a voice • Anonymous, so students will feel safe to share what they do not know or are concerned about • Teacher will not know where each student stands • Allows to collect and share at least some "collective" results, while keeping individual contributions anonymous • The collective record may be publicly revisited later as needed	X		• LMS quiz function • LMS survey function • Survey Monkeys

B. *Ungraded pre-test* (beginning of unit)	• Private, shared only with the instructor • Format allows for a greater variety of tasks and questions than a survey • Will help the teacher get a detailed "baseline" for each student • Students will likely take it more seriously than a survey • Because it is ungraded, students will feel more "safe" to share what they do not know (and may still have some concern even if ungraded) • Students can get individualized feedback from the teacher • Could be done at the beginning of a class, but if done online it will save precious synchronous time	X	*	• LMS quiz/test function
C. *Initial private journal* (beginning of unit)	• Private, shared only with the instructor • Every student will respond individually, and thus have a voice • Needs to be much more open-ended than a pre-test, so it may not get to specifics about each student prior knowledge, but on the other hand may reveal some other important things • Provides an individual record for student and instructor to revisit later (but not a collective/public one)	X		• LMS journal/ assignment function
D. *Initial discussion board related to the content*	• Every student will respond individually, and thus have a voice • Publicly shared – so students will benefit from other peer's prior knowledge, but may also feel less "safe" • Needs to be much more open-ended than a pre-test or survey, so it may not get to specifics about each student prior knowledge, but on the other hand may reveal some other important things • Provides an individual and collective record for student and instructor to revisit later	X		• LMS discussion board (DB) function • Padlet • Flipgrid
E. *Electronic poll* (whenever needed)	• Every student will respond individually, and thus have a voice • Anonymous, so students will feel safe to share what they do not know or are concerned about • Teacher will not be able to know what each student knows • Aggregated class results can be shared immediately – and possibly used to create conflicts that may generate curiosity in the topic		X	• Zoom polling function • Poll Everywhere • (others)
F. *Synchronous online discussion*	• Can be "controlled"/ facilitated by the teacher (unless it takes place in small groups/ breakout rooms) • Allows for students to build on each other's contributions • Not every student will be able to participate • There will not be a collective record to get back to and revisit, unless some kinds of notes are taken during the event and saved		X	• Any synch platform

G. *Sharing a related "memorable" story* (beginning of unit)	• Could be done both synchronously or asynchronously • Every student will respond individually, and thus have a voice • Publicly shared – so students will benefit from other peer's prior knowledge, but may also feel less safe • The information gathered may be less specific and more indirectly related, but it is also likely to be more authentic, as it will feel less like an assessment and thus students may be more open	X	X	• Any synch tool • LMS DB function • Padlet • Flipgrid
H. *Initial open-ended task requiring to use prior knowledge*	• More indirect, but perhaps the most effective way to figure out what students already know and can do • Most effective to activate prior knowledge needed to build on for the learning activity to follow • Difficult for the teacher to capture information for each individual student • The assigned task needs to be sufficiently open-ended to allow for many solutions at various levels of complexity	*	X	• Depends on the task

Key tips:

1. Word your prompts carefully and keep them open-ended, so as to avoid "leading" questions
2. Don't assign a grade, so students will feel "safer" in sharing what they do not know
3. To spark interest in the topic, whenever possible elicit and show a diversity of responses
4. To show learning/ growth, create and revisit records at the end of the unit/module