

SYNTHESIZING LEARNING 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 their remote/ online teaching that call for helping students identify the key ideas among what they have just learned . 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 when implementing it and their implications. To help you keep track of and reflect on your instructional decisions when “Synthesizing Learning”, on our webpage you can find a template to structure a Reflective Journal specific to this practice.

Introduction

Often time students (of all ages!) miss the key point of a learning activity unless offered the opportunity to explicitly reflect on what they have learned and its potential applications. This is what good teachers spontaneously do at the end of face-to-face lessons. Doing this when teaching online may be more challenging, yet also offer new opportunities for students to develop this valuable skill.

Potential benefits of *Synthesizing Learning* we want to maximize:

- Enabling students to “get” the key concept/big idea behind the specific learning activities they engaged in – “to see the forest for the trees”
- Enabling students to better appreciate the significance and value of what they learned
- Helping students see how they can apply what they have just learned to new problems and situations
- The ability and habit of “synthesizing learning” is a valuable life-long learning skill for students to acquire – so it will be worth spending some instructional time to help students develop it

Potential challenges (and how they may be reduced):

- It may be difficult for students to do this synthesis work– or even understand what is expected of them:
 - *Have the teacher model it first*
 - *The teacher may need to facilitate and scaffold this activity – especially the first few times*
- Many students may not appreciate the value of this activity:
 - *Be explicit about why you are doing it – especially at the beginning*
 - *Show the value by providing an opportunity to apply what was summarized in the synthesis*
- It takes time to do this well:
 - *Plan time for this in your synch sessions and/or as part of students’ independent work*

Other things to consider:

- There is value in creating some record of the synthesis, so students could refer to it as needed in future work
- It is important to evaluate what should be the role of the teacher vs. the student in each implementation of this practice – and in particular, how “directive” the teacher should be and who should have the last word in the synthesis

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

WHEN:

Option:	Advantages	Limitations
<i>“In the moment”</i>	<ul style="list-style-type: none"> • It is when it may be most helpful 	<ul style="list-style-type: none"> • Requires the teacher to make an impromptu decision and be able to do the synthesis without much preparation
<i>At the end of a lesson/unit</i>	<ul style="list-style-type: none"> • It is a natural “stopping point” • The teacher can prepare in advance (while also being ready to make adjustments based on what happened in the lesson) 	<ul style="list-style-type: none"> • Does not give the teacher time to reflect on and adjust based on what happened in the lesson
<i>As recap at the beginning of the next related activity</i>	<ul style="list-style-type: none"> • Teacher has time to prepare, after reflecting on what took place in the previous lesson • The “synthesis” can be immediately be put to use in the next activity 	<ul style="list-style-type: none"> • It may not be as immediate and impactful as doing it at the end of the activity itself

WHO does it:

Option:	Advantages	Limitations
<i>Teacher</i>	<ul style="list-style-type: none"> • The synthesis will likely be most complete, well organized and connected with the learning goals • The teacher is in full control • Provides a valuable model for what students may later do on their own 	<ul style="list-style-type: none"> • Some students may not be engaged • Students will not learn how to do it on their own
<i>Teacher with students’ input</i>	<ul style="list-style-type: none"> • Students are more engaged in the process • The teacher can still make sure that the synthesis is sufficiently accurate and complete • Still provides a model for students 	<ul style="list-style-type: none"> • It may not be sufficient by itself for students to learn how to do the synthesis on their own • It will take more time class time
<i>Students with teacher’s guidance</i>	<ul style="list-style-type: none"> • Provides a scaffold into learning how to do the synthesis for the students • The teacher can still make sure that the synthesis is sufficiently accurate 	<ul style="list-style-type: none"> • The synthesis may not be as well organized as if the teacher did it • It will take even more class time
<i>Individual student (independently)</i>	<ul style="list-style-type: none"> • Each student directly engages in making his/her own personal sense of the activity • It may increase students’ ownership in the activity • It may be easier to remember 	<ul style="list-style-type: none"> • The synthesis is likely to be more partial • Some student may not be able to identify the key points of the lesson

RECORDS created:

<i>Option:</i>	<i>Advantages</i>	<i>Limitations</i>
<i>None</i>	Takes the least amount of time and distractions	Neither teacher nor students have a record to use as a reference later
<i>Collective notes</i>	<ul style="list-style-type: none"> • The teacher can ensure the accuracy and quality of the class notes by writing or revising these notes • Each student will be able to easily refer to this synthesis as needed 	<ul style="list-style-type: none"> • Some students may still not fully understand or even misinterpret some of these notes It will take extra time and effort for the teacher to take and/or review these collective notes
<i>Individual notes</i>	<ul style="list-style-type: none"> • The record of the synthesis will be in the student's own words – so more meaningful for that student • Each student can easily refer his/her own synthesis as needed • The teacher has an individual record that could be used for assessment purposes 	<ul style="list-style-type: none"> • The quality of the notes may vary significantly across students – and may even include some misconceptions
<i>Full recording (of synch session when the synthesis take place)</i>	<ul style="list-style-type: none"> • It will provide a complete record of the synthesis activity • It will allow the teacher (and potentially students) to revisit the reflections and discussion that took place in breakout rooms 	<ul style="list-style-type: none"> • Very time consuming to revisit • Difficult to assess what each student got individually •

Useful online tools:

- **Learning Management Systems (LMS):** Any Learning Management System (such as Schoology, Google Classrooms, Canvas, Blackboard) offers functions to create online repositories where “synthesis notes” and other records can be organized, stored and accessed as needed by everyone in the class. Some LMSs also allow for journal functions that may make it easier for students to create and store individual records of their “learning syntheses” overtime.
- **Platforms allowing for synchronous sessions:** Platforms like *Zoom* or *Google Meet* allow for holding synchronous sessions during which the teacher can orchestrate live synthesis activities, involving the students in varying degrees. Recording these sessions will create a verbatim record of the synthesis that could be revisited if needed by students and/or teacher.

Options worth considering

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

Option:	Considerations	A	S	Useful online tools
A. Teacher's summary at the end of a lesson, while taking notes	<ul style="list-style-type: none"> • Helps students make sense of what they just did • Because it is done by the teacher, the synthesis will take the least amount of time and be most accurate and organized • Notes created by the teacher are likely to be the most clear, accurate and concise record for students to refer to later • Teacher will need to prepare in advance, while being ready to make modifications on the spot to reflect what happened in the previous activity • It may be especially valuable at the beginning of the course, to model for students what they should eventually be able to do on their own - although not enough by itself to teach students how to do it on their own 		X	<ul style="list-style-type: none"> • Recording feature • Online repository
B. Teacher's recap at the beginning of the next relevant lesson	<ul style="list-style-type: none"> • It will help students see the immediate relevance of what they learned, by showing how it can be applied/ extended to a new situation – although it may also be more difficult for some students to remember what was done • Because it is done by the teacher, the synthesis will take the least amount of time and be most accurate and organized • Teacher will have time in advance to reflect and synthesize what happened in the previous class 		X	<ul style="list-style-type: none"> • Recording feature
C. Teacher's posted summary notes	<ul style="list-style-type: none"> • Teacher's written summary will be the most organized, clear and accurate (as the teacher will have opportunity to refine it) and thus provide the best record for students to refer to • Teacher will have time in advance to reflect and synthesize what happened in the previous class • Likely to take more preparation time on the part of the teacher 	X		<ul style="list-style-type: none"> • Online repository
D. "What Have I Learned" class reflection, with teacher taking notes	<ul style="list-style-type: none"> • The students will be engaged in the identification of the "big ideas" of the lesson – so it will likely be more meaningful and impactful • The teacher will facilitate the activity and take notes – to ensure accuracy • It may not be as complete and concise as a synthesis prepared by the teacher, but it will help students develop the skill of synthesizing learning • It will take more class time 		X	<ul style="list-style-type: none"> • Online repository • Recording feature

<p><i>E. Students' private reflective journal</i></p>	<ul style="list-style-type: none"> • Each student will personally engage in the process of “synthesizing learning” – and thus benefit in terms of developing this practice • The record of the synthesis will be in the student’s own word – so more meaningful for that student • Each student can easily refer his/her own synthesis as needed • The teacher has an individual record for each student for assessment purposes • The synthesis is likely to be incomplete and possibly incorrect in some cases – so the teacher will need to review this work and provide feedback as needed before the journal can be used as a reference for future work 	<p>X</p>	<ul style="list-style-type: none"> • Journal/assignment feature
<p><i>F. Students' synthesis post (publicly shared)</i></p>	<ul style="list-style-type: none"> • Every student will personally engage in the process of “synthesizing learning” – and thus benefit in terms of developing this practice • The records of the synthesis will be in students’ own words – so possibly more accessible and meaningful, although they may also be less clear to other students • Students will benefit from comparing their synthesis to that created by other students – and thus spontaneously recognize some limitations in their own • The teacher has an individual record for each student for assessment purposes • The syntheses thus created are likely to be incomplete and possibly incorrect in some cases – so the teacher will need to review this record and if needed discuss discrepancies and possibly create a revised comprehensive and more organized record to be used as a reference for future work 	<p>X</p>	<ul style="list-style-type: none"> • Discussion board feature

Key tips:

1. Make sure you set aside sufficient time in your plan for this critical activity, commensurate to the importance of what is being synthesized
2. Purposefully plan how to create records of the synthesis done, for future reference
3. Be explicit about why you are doing it, as students may not appreciate its value
4. Prepare students to be able to eventually do this synthesis on their own