

Appendix A-Kazakhstani Teaching Observation Protocol (KTOP)

I. BACKGROUND INFORMATION

Name of teacher _____ Announced Observation? _____
(Yes / No / or Explain)

Type of Class (i.e. lab, workshop, Lecture) _____

Years of Teaching _____ Location of class _____

Subject observed _____ Grade level _____

Observer _____ Date of observation _____

Start time _____ End time _____

II. CONTEXTUAL BACKGROUND AND ACTIVITIES

In the space provided below please give a brief description of the lesson observed, the classroom setting in which the lesson took place (space, seating arrangements, etc.), and any relevant details about the students (number, gender, ethnicity) and teacher that you think are important. Use diagrams if they seem appropriate

Time:	Description of Events / Lay out of the classroom

III. LESSON DESIGN AND IMPLEMENTATION

		Never Occurred		Very Descriptive		
1)	The instructional strategies and activities consider students' prior knowledge and the preconceptions inherent therein.	0	1	2	3	4
2)	The lesson was designed to engage students in discussion of prior knowledge.	0	1	2	3	4
3)	In this lesson, student exploration preceded formal presentation. Students are given multiple scaffolds to assist them as they practice and develop independence.	0	1	2	3	4
4)	This lesson encouraged students to seek and value multiple ways of problem solving	0	1	2	3	4
5)	Ideas originating with students were encouraged and may determine the focus and direction of the lesson.	0	1	2	3	4

IV. METHODS/TEACHING STRATEGIES

6)	Connections with other content disciplines and/or real world phenomena were explored and valued.	0	1	2	3	4
7)	Students made predictions, estimations and/or hypotheses and devised a means for testing them.	0	1	2	3	4
8)	Elements of abstraction (i.e., symbolic representations,) were encouraged when it was important to do so. (Students used a variety of means (models, drawings, graphs, symbols, concrete materials, manipulatives, etc.) to represent phenomena)	0	1	2	3	4
9)	Teachers encouraged students to be reflective about their learning.	0	1	2	3	4
10)	Intellectual rigor, constructive criticism, and the challenging of ideas were valued.	0	1	2	3	4

V. CLASSROOM CULTURE

A. Communicative Interactions

		Never Occurred			Very Descriptive		
11)	The teacher encouraged students in the communication of their ideas to others using a variety of means such as technology and media.	0	1	2	3	4	
12)	The teacher's questions triggered divergent modes of thinking.	0	1	2	3	4	
13)	The teacher provided for a high proportion of student talk with much of it occurring between and among students.	0	1	2	3	4	
14)	Student questions and comments often determined the focus and direction of classroom discourse.	0	1	2	3	4	
15)	The teacher demonstrated flexibility and responsiveness to the instructional plan based on learner needs e.g. differentiation	0	1	2	3	4	
16)	The teacher organizes the physical space so it is conducive to the movement of students and groups.	0	1	2	3	4	

B. Student/Teacher Relationships

17)	The teachers encouraged and valued active participation of students.	0	1	2	3	4	
18)	Students were encouraged to generate alternative solutions, strategies, and different ways of interpreting evidence.	0	1	2	3	4	
19)	In general, the teacher was patient with students.	0	1	2	3	4	
20)	The teacher acted as a resource person, working to support and enhance student investigations.	0	1	2	3	4	

- | | | | | | | |
|-----|--|---|---|---|---|---|
| 21) | The metaphor “teacher as listener” and (formative assessor) was very characteristic of this classroom. | 0 | 1 | 2 | 3 | 4 |
|-----|--|---|---|---|---|---|

VI. ASSESSMENT INTERACTIONS

- | | | Never
Occurred | | | Very
Descriptive | |
|-----|---|-------------------|---|---|---------------------|---|
| 22) | The teacher guided active participation of the students in assessing each other’s understanding of essential lesson concepts or ideas. | 0 | 1 | 2 | 3 | 4 |
| 23) | The teacher consistently questions students’ ideas and asks for students’ clarification to assess student knowledge and guide them in reflecting on their learning. | 0 | 1 | 2 | 3 | 4 |
| 24) | The teacher facilitates a classroom culture that routinely includes assessment and stipulation of reasoning on the part of the students in addition to student-to-student assessment interaction. | 0 | 1 | 2 | 3 | 4 |

VII. INTEGRATING CONTENT AND LANGUAGE IN TEACHING

- | | | | | | | |
|-----|---|---|---|---|---|---|
| 25) | The lesson promoted learning of both subject content and the language needed to effectively communicate their learning. | 0 | 1 | 2 | 3 | 4 |
| 26) | The lesson made use of languages in the teachers’ and students’ repertoires | 0 | 1 | 2 | 3 | 4 |

KTOP Observed Teacher Semi-Structured Interviews

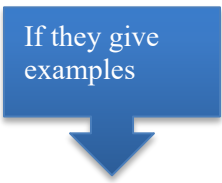
This is to be used immediately following the observation

(be sure to ask any questions from observation that you need clarification about)

1. What were your goals for the lesson?

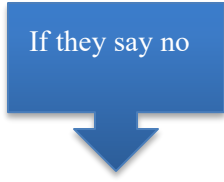
2. Do you think you achieved them?

If they give
examples



Elaborate on examples

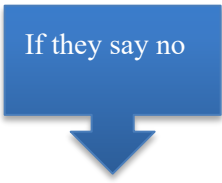
If they say no



What do you think prevented you from achieving them?

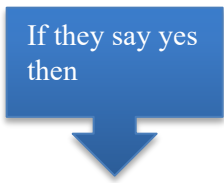
3. Do you see any difference in teaching in science in English, Russian or Kazakh?

If they say no



Why not?

If they say yes
then



How do you modify for the different languages?

4. Do you know or have you heard of Content and Language Integrated Learning (CLIL)?

If they say no



Go to next question?

If they say yes
then



What do they know about it?

Any training in CLIL? If yes, was it effective/useful or not? Why?

Are they adding any of the CLIL practices to their lessons? If yes, give examples

5. Did you have any specific language objectives for this lesson? If yes, what were they?

If they say no



Move on to next question

If they say yes
then



If yes, what were they?

How did you meet them? Specific examples?

Very
Descriptive

6. What were the language levels of your students? (L1, L2, L3)

7. Did you have any assessment goals for the lesson? If yes, what were they and did you meet them?

8. Have you taken any professional development or in-service training in reformed practices? If yes, ask for details.

9. Showing the teacher a blank protocol ask them to discuss any concerns or suggestions for change within the protocols. Ask them if there is anything missing from their perspective.
10. Does your school encourage student-centered approach to learning?
11. What is your educational background? (i.e., voc tech certificate, UG degree in XXX, master's degree, etc).

Bibliography

- Coady, M., Miller, M.D., Jing, Z., Olszewska, A., De Jong, E., and Yilmaz, T. (2020). Can English learner teacher effectiveness be observed? Validation of an EL-modified framework for teaching. *TESOL Quarterly*, 54(1), 173-200.
- Sawada, D., Piburn, M. D., Judson, E., Turley, J., Falconer, K., Benford, R., & Bloom, I. (2002). Measuring reform practices in science and mathematics classrooms: The reformed teaching observation protocol. *School Science and Mathematics*, 102(6), 245-253.

KAZAKHSTAN TEACHING OBSERVATION PROTOCOL RUBRIC (KTOP)

III. LESSON DESIGN AND IMPLEMENTATION

1. The instructional strategies and activities consider students' prior knowledge and the preconceptions inherent therein.

A cornerstone of reformed teaching is taking into consideration the prior knowledge that students bring with them. The term “respected” is pivotal in this item. It suggests an attitude of curiosity on the teacher’s part, an active solicitation of student ideas, and an understanding that much of what a student brings to the mathematics or science classroom is strongly shaped and conditioned by their everyday experiences.

4	Most students are engaged in discussion of prior knowledge , and it is explicit that preconceptions are explored. Most students are engaged in small group and whole group discussions that lead to real student understanding.
3	Students apply prior knowledge in whole group discussion. Teacher solicits examples or discussion of problems and some students respond.
2	Teacher asks students to recall and a few students respond. There is some discussion in the whole group.
1	The teacher refers to previous student experiences or reminds students of previous learning.
0	The teacher makes no reference to prior knowledge.

2. The lesson was designed to engage students in discussion of prior knowledge.

Much knowledge is socially constructed. The setting within which this occurs has been called a “learning community.” The use of the term community in the phrase “the scientific community” (a “self-governing” body) is similar to the way it is intended in this item. Students participate actively; their participation is integral to the actions of the community, and knowledge is negotiated within the community. It is important to remember that a group of learners does not necessarily constitute a “learning community.”

4	All students in the small group or cross group contribute to the construction of ideas and theory building. Whole class discussion also occurs with many students actively participating.
3	Some students in the small group and or cross group contribute to the construction of ideas and theory building.
2	There is some whole class discussion with only a few students participating in the construction of ideas or theory building.
1	There is some student-to-student interaction and discussion but little or no construction of ideas or theory building.
0	The lesson employs only whole class discussion with little evidence of community such that the lesson is teacher-centered.

3. In this lesson, student exploration preceded formal presentation. Students are given multiple scaffolds to assist them as they practice and develop independence.

Teaching allows students to build complex abstract knowledge from simpler, more concrete experience. This suggests that any formal presentation of content should be preceded by student exploration. This does not imply the converse that all exploration should be followed by a formal presentation.

4	The teacher presents NO formal content prior to student exploration.
3	The teacher introduces some formal content prior to student investigation.
2	The teacher presents the expected results of the student investigation prior to student exploration.
1	The teacher's instruction of formal content occurs prior to student investigation.
0	No student exploration is observed

4. This lesson encouraged students to seek and value multiple ways of problem solving.

Divergent thinking is an important part of mathematical and scientific reasoning. A lesson that meets this criterion would not insist on only one method of experimentation or one approach to solving a problem. A teacher who valued alternative modes of thinking would respect and actively solicit a variety of approaches, and understand that there may be more than one answer to a question.

4	The teacher solicits multiple approaches to solve the problem and class discussion occurs in small and large groups. Allowing for students to evaluate (i.e., peer review) responses and discuss their relative merits.
3	The teacher solicits multiple approaches to solve the problem in small and/or large groups. Students compare approaches, make generalizations
2	The teacher encourages students to utilize at least two approaches to solve the problem individually or within small groups. Students use information to solve problems, identify connections and/or relationships.
1	The student investigation is teacher directed. Activity is “cookbook” and/or has one solution to a problem. Students restate or paraphrase information.
0	The teacher does not encourage students to investigate or problem solving. Activity includes memorizing information and does not indicate understanding the material.

5. Ideas originating with students were encouraged and may determine the focus and direction of the lesson.

If students are members of a true learning community, and if divergence of thinking is valued, then the direction that a lesson takes cannot always be predicted in advance. Thus, planning and executing a lesson may include contingencies for building upon the unexpected. A lesson that met this criterion might not end up where it appeared to be heading at the beginning.

4	The teacher presents a general problem and students originate ideas/approaches/strategies which focus the direction of the lesson. It involves either activity or discussion.
3	Teacher determines focus of lesson but students generate ideas and questions which significantly change the direction of the lesson. Teacher occasionally ties student discussion back to original lesson plan. A large portion of the lesson is determined by student input.
2	Teacher determines focus of lesson and although student ideas are explored in some depth, the end result is still as planned.
1	Teacher determines focus of lesson which proceeds as planned; although some student ideas may be explored at a superficial level, it does not change the direction of the lesson. Student input is largely procedural.
0	The lesson is teacher demonstration/lecture.

IV METHODS / TEACHING STRATEGIES

6. Connections with other content disciplines and/or real world phenomena were explored and valued.

Connecting mathematical and scientific content across the disciplines and with real world applications tends to generalize it and make it more coherent. A physics lesson on electricity might connect with the role of electricity in biological systems, or with the wiring systems of a house. A mathematics lesson on proportionality might connect with the nature of light and refer to the relationship between the height of an object and the length of its shadow.

4	The lesson is connected to a familiar context/real world example. Applications or connections to another discipline are considered and explored. Students are highly engaged in making connections.
3	The lesson is connected to a familiar context/real world example. Applications or connections to another discipline are mentioned. Students are moderately engaged in making connections.
2	A familiar context/real world example is mentioned but there is no significant exploration. Any applications or connections to another discipline observed may be superficial. Student engagement is minimal.
1	The lesson is based on a familiar context/real world example, but there are no connections to another discipline.
0	The lesson is not connected to another discipline or based on a familiar context/real world example.

7. Students made predictions, estimations and/or hypotheses and devised a means for testing them.

This item does not distinguish among predictions, hypotheses and estimations. All three terms are used so that the KTOP can be descriptive of both mathematical thinking and scientific reasoning. Another word that might be used in this context is “conjectures”. The idea is that students explicitly state what they think is going to happen before collecting data. In mathematics, these terms may have a somewhat different meaning which would involve analyzing situations, and engaging in systematic reasoning and proof. Exploring, justifying, and using mathematical conjectures are common to all content areas and, with different levels of rigor, all grade levels.

4	The teacher encourages the students to explicitly make and explain their prediction, estimation, hypothesis, and/or solutions. Students devise a means for testing their prediction, estimation, hypothesis, and/or solutions.
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3	The teacher encourages the students to explicitly make their prediction, estimation hypothesis and/or solutions but does not ask them to explain them- The teacher guides student discussions on how they could have tested their prediction, estimation, hypotheses, and/or solutions.
2	The students make at least one prediction, estimation, hypothesis, and/or solution and the teacher devises a means for testing them.
1	The students make at least one prediction, estimation, hypothesis and/or solution but they do not discuss testing them.
0	Students informally play around with materials or ideas.

8. Elements of abstraction (i.e., symbolic representations,) were encouraged when it was important to do so. (Students used a variety of means (models, drawings, graphs, symbols, concrete materials, manipulatives, etc.) to represent phenomena)

Conceptual understanding can be facilitated when relationships or patterns are represented in abstract or symbolic ways. Not moving toward abstraction can leave students over-whelmed with trees when a forest might help them locate themselves.

4	The teacher encourages the students to represent the phenomenon in an abstracted way or multiple representations (verbally, written, computer modeling, graphical, mathematical, pictorial, diagrammatic, etc.). There is a discussion of how the representations are related to each other.
3	The teacher encourages the students to represent the phenomenon in an abstracted way or by way of multiple representations (verbally, written, computer modeling, graphical, mathematical, pictorial, diagrammatic, etc.). No discussion follows.
2	Only the teacher represents the phenomenon with multiple representations - no student input.
1	Only the teacher represents the phenomenon with a single representation – no student input.
0	No abstract or symbolic representations of the phenomenon are demonstrated.

9. Teachers encouraged students to be reflective about their learning.

Active reflection is a **meta-cognitive activity** that facilitates learning. It is sometimes referred to as “thinking about thinking.” Teachers can facilitate reflection by providing time and suggesting strategies for students to evaluate their thoughts throughout a lesson. A

review conducted by the teacher may not be reflective if it does not induce students to re-examine or re-assess their thinking.

4	The teacher encourages the students to discuss questions such as “How do we know this?” “How can we be sure?” “What does this tell us about what we know?” within their small group. Then the teacher extends the discussion back to the whole class.
3	The teacher encourages the students to discuss questions such as “How do we know this?” “How can we be sure?”, “What does this tell us about what we know?” only within their small group. (no whole group discussion)
2	There are some students that formulate some ideas about their learning process (i.e., are thinking about their thinking) but the teacher does not encourage the students to bring forth these ideas during the class discussion.
1	The teacher offers up one or two possible standard ideas about how the students might be thinking about their learning process.
0	The teacher does not provide time for student reflection.

10. Intellectual rigor, constructive criticism, and the challenging of ideas were valued.

At the heart of mathematical and scientific endeavors is rigorous **debate**. In a lesson, this would be achieved by allowing a variety of ideas to be presented, but insisting that challenge and negotiation also occur. Achieving intellectual rigor by following a narrow, often prescribed path of reasoning, to the exclusion of alternatives, would result in a low score on this item. Accepting a variety of proposals without accompanying evidence and argument would also result in a low score.

4	There is critical discussion of the ideas within the small groups and/or cross-group and/or whole group.
3	There is critical discussion of the ideas within the small groups.
2	The students articulate more than one idea and competing ideas are offered.
1	The students articulate one idea, but no competing ideas are offered.
0	The students articulate no ideas related to the activity(ies).

V CLASSROOM CULTURE

a. Communicative Interactions

11. Teachers encouraged students in the communication of their ideas to others using a variety of means such as technology and media.

The intent of this item is to reflect the communicative richness of a lesson that encouraged students to contribute to the discourse and to do so in **more than a single mode (making presentations, brainstorming, critiquing, listening, making videos, group work, etc.)**. Notice the difference between this item and item 11. Item 11 refers to representations. **This item refers to active communication using multiple modes.**

4	Most/all students share their ideas with their classmates using at least three modes of communication in small and whole groups.
3	Most students share information using at least two means of communication in small groups. Students clearly listen to each other.
2	Some students may communicate ideas within small groups using one or two means of communication. It is noted that many students are not engaged in communicating ideas.
1	Little communication among students. Students may share procedural information but not ideas.
0	The students do not communicate ideas with each other.

12. The teacher's questions triggered divergent modes of thinking.

Teacher questioning triggers divergent modes of thinking by framing problems for which there may be more than one correct answer or framing phenomena that can have more than one valid interpretation.

4	The teacher asks many open-ended questions which open up the conceptual space. Students offer multiple explanations and/or explore connected areas within the large AND small groups. Many different answers are possible and various interpretations may be explored.
3	The teacher asks some genuinely open-ended questions that focus the lesson. Students are encouraged to respond. Teacher may also propose explanations, but does not discount student's ideas.
2	The teacher asks at least one open-ended or divergent question. It is a genuine open ended question. Teacher may encourage students to try out different strategies AND encourage them to explore. There is time for expression of student ideas.
1	The teacher asks at least one open-ended question, but it is clear that the teacher is looking for a specific answer.
0	The teacher asks no open-ended questions. Questions are fact-based only.

13. The teacher provided for a high proportion of student talk with much of it occurring between and among students.

A lesson where a teacher does most of the talking is not student centered. This item reflects the need to increase both the amount of student talk and of talk among students. A “high proportion” means that at any point in time it was as likely that a student would be talking as that the teacher would be. A “significant amount” suggests that critical portions of the lesson were developed through discourse among students.

4	This lesson is mostly student talk with critical portions of the lesson developed through student-to-student discourse.
3	A larger portion of the talk is student-to-student; however critical portions of the lesson are not developed through this discourse.
2	The proportion of student-to-student talk to teacher-to-student talk is about equal.
1	There is minimal student-to-student dialog.
0	There is no talk amongst students. Student-instructor dialog (answering questions) is not scored for this item.

14. Student questions and comments often determined the focus and direction of classroom discourse.

This item implies not only that the flow of the lesson was often influenced or shaped by student contributions, but that once a direction was in place, students were crucial in sustaining and enhancing the momentum

4	The students discuss in their groups, between groups, with the teacher AND with the whole class. This discourse is central to the development of the description and development of understanding of the phenomenon.
3	The students discuss in their groups AND with the teacher. This discourse is central to the development of the description of the phenomenon.
2	The students discuss in their small groups, but the discourse is not central to the development of the description of the phenomenon.
1	The students discuss with the teacher, however student input only slightly influences the focus or direction of the discourse.
0	The teacher determines the direction of the lesson with no student input.

15. The teacher demonstrated flexibility and responsiveness to the instructional plan based on learner needs e.g. differentiation

Respecting what others have to say is more than listening politely. Respect also indicates that what others had to say was actually heard and carefully considered. The lesson would encourage and allow every member of the community to present their ideas and express their opinions without fear of censure or ridicule.

4	Most students are comfortable representing their ideas AND expressing their opinions without fear of censure or ridicule. Teacher interactions always encourage student exploration and/or discussion for all students
3	Most students are comfortable representing their ideas AND expressing their opinions without fear of censure or ridicule. Teacher interactions usually encourage student exploration and/or discussion for all students.
2	Some students are comfortable representing their ideas and expressing their opinions without fear of censure or ridicule. Teacher interactions seldom encourage student exploration and/or discussion for all students.
1	There is some student interaction. Teacher interaction does not encourage student exploration and/or discussion for all students.
0	There is little or no student interaction. If the students interact, negative comments may occur.

16. The teacher organizes the physical space or arrangement of students so it is conducive to movement of students and groups.

4	The teacher consistently and effectively organizes the physical space or arrangement of students, so it is a safe environment that supports diverse grouping and the ability to see learning materials and movement, and allows effective communication among both teachers and students.
3	The teacher generally and effectively organizes the physical space or arrangement of students so it is a safe learning environment that encourages diverse grouping, the ability to see learning materials and movement and allows effective communication among both teachers and students.
2	The teacher does not demonstrate effective organization of the physical space or arrangement of students. The physical space was in some ways not conducive to learning or seeing all the classroom visuals or communicating in groups.
1	There is some attempt to organize the physical space or arrangement of students but this could be improved for more effective learning and opportunities
0	It appears that the physical space or arrangement of students has been given consideration as to how it impacts on student learning and communication.

b. Student / Teacher Relationships

17) The teacher acts as a facilitator encouraging and valuing active participation of students.

This implies more than just a classroom full of active students. It also connotes their having a voice in how that activity is to occur. Simply following directions in an active manner does not meet the intent of this item. Active participation implies agenda-setting as well as “minds-on” and “hands-on”.

4	Most of the students describe the phenomenon and play a significant role in constructing and validating the final explanation of the phenomenon.
3	Some of the students describe the phenomenon and play a significant role in constructing and validating the final explanation of the phenomenon.
2	Most of the students describe the phenomenon but no one other than the teacher validates and constructs the explanation.
1	Some of students describe the phenomenon but no one other than the teacher validates and constructs the explanation.
0	No Student participation

18. Students were encouraged to generate alternate solutions, strategies, and different ways of interpreting evidence

The teaching shifts the balance of responsibility for mathematical or scientific thought from the teacher to the students. The teacher actively encourages this transition. For example, in a mathematics lesson, the teacher might encourage students to find more than one way to solve a problem. This encouragement would be highly rated if the whole lesson was devoted to discussing and critiquing these alternate solution strategies. **(Assumption being most problems have multiple explanations)**

4	This is valued within groups AND is discussed with the whole class.
3	This is valued within groups; it is not discussed with the whole class.
2	Within whole class multiple strategies, conjectures or ways of interpreting evidence are accepted but no effort is made to solicit them.
1	There is only one acceptable path to the solution solicited during the class.
0	Students are not encouraged to use strategies and provide conjectures or the teacher only offers low level problems that have only 1 solution.

19. In general, the teacher was patient with students.

Patience is not the same thing as tolerating unexpected or unwanted student behavior. Rather there is anticipation that, when given a chance to play itself out, unanticipated behavior can lead to rich learning opportunities. A long “wait time” is a necessary but not sufficient condition for rating highly on this item.

4	The teacher provides ample opportunity for students to explore on their own terms and sufficient wait time.
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3	The teacher does not capitalize on all opportunities to allow students to explore on their own terms but does provide sufficient wait time.
2	The teacher provides sufficient wait time before accepting student responses.
1	The teacher sometimes provides sufficient wait time before accepting student responses.
0	The teacher provides no wait time.

20. The teacher acted as a resource person, working to support and enhance student investigations.

A reformed teacher is not there to tell students what to do and how to do it. Much of the initiative is to come from students, and because students have different ideas, the teacher's support is carefully crafted to the idiosyncrasies of student thinking. The metaphor, "guide on the side" is in accord with this item.

4	The teacher uses student investigative data or questions to direct the inquiry process.
3	The teacher uses student questions to direct the inquiry process
2	The teacher answers questions instead of directing inquiry.
1	The teacher demonstrates the phenomenon followed by whole class discussion
0	The class is lecture based.

21. The metaphor "teacher as listener" (and formative assessor) was very characteristic of this classroom.

This metaphor describes a teacher who is often found helping students use what they know to construct further understanding. The teacher may indeed talk a lot, but such talk is carefully crafted around understandings reached by actively listening to what students are saying. "Teacher as listener" would be fully in place if "student as listener" was reciprocally engendered.

4	The teacher listens to the students and asks questions to help the students construct their own understanding.
3	The teacher listens to the students but most of the teacher's questions only allowed for yes/no or factual answers.
2	Some attempts are made by the teacher to incorporate student ideas into the lesson but most of the questions only allowed for yes/no or factual answers.

1	One attempt is made by the teacher to incorporate student ideas into the lesson but most of the questions only allow for yes/no or factual answers.
0	There is no attempt by the teacher to incorporate student ideas into the lesson all of questions only allow for yes/no or factual answers

VI Assessment Interactions

22. The teacher guided active participation of students in assessing each other's understanding of essential lesson concepts or ideas.

Assessment questions should not only be asked by the teacher in a collaborative learning culture but by all (including other students). Therefore, to rate high on this question students must be actively asking each other questions without the prompting of teachers.

4	Most students ask each other clarification questions that assess each other's conceptual understanding in small groups and as a whole class.
3	Some students ask each other clarification questions that assess each other's conceptual understanding in small groups and as a whole class.
2	Some students ask each other clarification questions that assess each other's conceptual understanding but this is limited to either small groups or as a whole.
1	Only a single student's ideas are assessed but student-to-student interaction concerning assessment of conceptual understanding is not encouraged.
0	No students question each other's statements.

23. Teacher consistently questions students' ideas and asks for students' clarification to assess student knowledge and to guide them in reflecting on their learning.

When the teachers ask questions of students, are they questions that ask the students to go deeper into their responses? The teacher uses the student response to further assess the depth of their understanding of the topic.

4	The teacher asks questions of most of the students that requires them to state their reasoning and includes exploratory follow-up question(s).
3	The teacher asks questions of some of the students that requires them to state their reasoning and includes exploratory follow-up questions.
2	The teacher asks questions of students that requires them to state their reasoning but does not ask exploratory follow-up questions.
1	The teacher only asks questions that do not require students to state their reasoning (i.e., confirmation questions requiring yes or no or recall or short answer factual questions)

0	The teacher does not question the students.
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24. Teacher facilitates a classroom culture that routinely includes assessment and stipulation of reasoning on the part of the students in addition to student-to-student assessment interaction

This question is looking at specific classroom culture where students know that they have to qualify their answers and those answers are to be assessed by all members of the community. Do you observe the teacher encouraging this type of culture? Are the questions of students thoughtful and require greater than a short factual response or a yes/no answer? Does the teacher ask the students to respond to other students' assertions?

4	The teacher routinely requests most students to respond to other students' comments in order to clarify their understanding
3	The teacher routinely requests some students to respond to other students' comments in order to clarify their understanding
2	The teacher routinely requests a few students to respond to other students' comments in order to clarify their understanding
1	Assessment is predominantly teacher-centered
0	No assessment of student ideas facilitated in any way by teacher

VII Integrating Content and Language in Classes

25. The lesson promoted the learning of both subject content and the language necessary to communicate that content effectively.

See Karabassova (2018) for further explanation of CLIL and the approach teaching subjects in an additional language with both content and language objectives.

*L1 (first language) in this study is defined, drawing from NIS practice, as either Kazakh or Russian. L1 is the language chosen by a parent or guardian for a child as the primary language of instruction at the primary and secondary school levels. While in reality students may have Russian or another language as their first home language, or have developed two or more languages simultaneously at home, this distinction makes it clearer that in a Kazakh-medium school, the L1 is Kazakh, L2 is Russian, and L3 is English. In a Russian-medium school, L1 is Russian, L2 is Kazakh, and L3 is English.

4	Both content and language objectives were a) explicit, b) specific, c) integrated, d) oriented around subject-knowledge development tasks, and consistently mentioned throughout the lesson.
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3	Both content and language objectives were sometimes mentioned to explicitly throughout the lesson.
2	Both content and language objectives were observed to but implicitly and incidentally
1	Only content objectives were explicitly mentioned
0	Neither focused language nor content objectives were mentioned or observed

26. The lesson made effective use of all the languages in teachers' and students' repertoires.

This rubric is based on the position that the ideal is to create an implementational and ideological space (Hornberger, 2002) for languaging for learning content. A monolingual, English-only space is considered least effective for content and language development in a multilingual context. The lower middle framings are based on preliminary research in higher education of L1 language practices that facilitate comprehension but not active learning of content through a target language.

*target language means the primary language of instruction for a particular subject.

4	The teacher explicitly creates a welcoming space for the fluid use of shared language repertoires for meaning making and identity development.
3	Teacher occasionally uses or allows students to use L1* or other languages to support content acquisition, but at other times restricts students use when it might be beneficial for meaning making.
2	Teacher makes judicious but overly limited use of L1, e.g., by only providing a glossary of subject-specific vocabulary/terminology in multiple languages.
1	Teacher makes ineffective use of the students' L1, e.g., by translating all content presented in the target language*.
0	The teacher explicitly or implicitly allows for and uses only one language in the classroom.