

Inquiry Notebooks for Twenty-First-Century Skill Development

Creativity and imagination. Critical thinking. Problem solving. Flexibility and adaptability. Global and cultural awareness. Information literacy. Written communication skills. These concepts reflect some of the key skills twenty-first-century learners should possess. While the definition of twenty-first-century skills is not universally agreed upon, many educational entities include several types of information literacy, learning and innovation, media technology, and life and career skills (P21 Partnership for 21st Century Learning 2019). These skill sets go beyond traditional subject areas and emphasize the need to communicate in English outside the classroom in social and professional situations (Ananiadou and Claro 2009; Göksün and Kurt 2017; Barrot 2014).

With the emphasis on building twenty-first-century skills in learners, English language teachers are challenged to find activities that will build English language proficiency while promoting higher-order thinking in the target language. One reason is that an individual learner's zone of proximal development (ZPD) for language proficiency and for critical thinking may be different. ZPD—the difference between the learner's ability to solve problems independently in relationship to his or her ability to solve problems with guidance (Vygotsky 1978)—is an important concept to consider when developing twenty-first-century skills. Learners may have more advanced critical-thinking skills developed in their primary language than in English. As a result, they may need more support to express themselves critically in the target language. Understanding where and when learners need assistance helps the teacher provide appropriate scaffolding.

Inquiry-based learning takes ZPD into consideration by using scaffolding to guide the learner through the process of posing questions, thinking critically about issues, and solving problems (Chu et al. 2017). This social constructivist approach “emphasizes personally relevant questions that inspire students to learn more and create unique ways of sharing what they have learned” (Kuhlthau, Maniotes, and Caspari 2015, 4). Through an intentional, student-centered approach, learning becomes deep, motivating, and interconnected. Under the guidance of the teacher, learners apply knowledge to new contexts as they confirm results, develop explanations, and aim to solve problems (Dostál 2015).

One method to incorporate inquiry-based learning into a language classroom—and help students process their experience, develop

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language proficiency, and build twenty-first-century skills—is through inquiry notebooks. The transition from high school to college can be difficult socially and academically, and many learners do not have a formal outlet to share their experiences. This led me to use inquiry notebooks with first-year university students to get them to think critically about their college experience, both in and out of the classroom. I have since used inquiry notebooks with learners across proficiency levels, of varying ages, and at different points in their academic pursuits. This article will explain the rationale and describe the procedures to implement inquiry notebooks as an instruction tool to put twenty-first-century skills in reach for English learners.

WHAT IS AN INQUIRY NOTEBOOK?

An inquiry notebook is a collection of student work showcasing the progressive development of higher-order thinking skills over a period of time. Using the target language, learners are asked to think deeply by responding to a prompt provided by the instructor. This prompt is an essential aspect of the inquiry notebook and relates to students' relevant learning experiences. The notebook can be organized around central themes or units of a course and builds upon activities in and out of class.

Inquiry notebooks are different from journals in that they are modeled after research-based practices. Qualitative and action researchers learn in the field by collecting data, interpreting field notes, looking for patterns, and establishing findings. Through reflection, researchers (1) draw conclusions based on lived experiences, observations, and understanding; (2) use data to support their claims; (3) reflect on the significance of the experience; and (4) offer direction for future studies.

In an inquiry notebook, students do similar tasks. The classroom is their field and is rich with data. Class activities provide opportunities to check understanding and get feedback. Learners can use metacognitive skills to reflect on activities by thinking deeply about content, how they are learning, and how they use the target language; they show understanding by applying, analyzing, evaluating, and creating in the entries they write.

Inquiry notebooks are a practical way for students to build communicative competency, as learners show their understanding of the prompt in a way that is comprehensible to the reader. Sutarsyah and Yufriзал (2018) found that writing improved when learners were given the chance to process content and get feedback. Inquiry notebooks emphasize freewriting without the stress of choosing the perfect vocabulary term or writing an impressive sentence that is both complex and grammatically sound. Entries can be supplemented with drawings, photographs, and quotes to appeal to a variety of learning styles.

MATERIALS FOR THE INQUIRY NOTEBOOK

An inquiry notebook can take many shapes and forms: a basic notebook, a journal-style book, or an electronic format. At the start of the semester, I pass around a large stack of multicolored paper and ask students to take eight sheets. Folded in half, the papers form a notebook, with each student's book reflecting his or her personality in the colors chosen. This provides adequate space for a cover page and a weekly reflection. The number of pieces of paper can be adjusted, based on the number of entries.

Electronic versions of inquiry notebooks, such as blogs, are a viable option. Knowing that an

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audience will read their work can motivate learners to share personal insights. On the other hand, blogs are inherently public and shift the focus from the teacher as the primary audience to a potentially broader audience, and that may not be feasible for writing in class. Paper versions of inquiry notebooks, especially when combined with the option of visual responses, provide a space for students to think without the burden of spellcheck and grammar check. Freewriting in this way can offer insight into the personality of the learner that may be edited out when word-processed. Technical proficiency, Internet access, and word-processing availability in the location where students will write play a role in determining whether this format is appropriate.

Instructors should take class size and student population into consideration when determining the format of the notebooks. If you have a large class, you want to make sure the notebook is portable so that you can manage transporting the notebooks when providing feedback and grading. Pieces of paper are not as durable as standard notebooks or journals, but they are lighter and more cost effective. However, passing out paper and sending around a stapler to a large class can be logistically challenging, and instructors in large classes may wish to use preassembled notebooks. Regardless of type, the inquiry notebook should be dedicated to this task and not integrated with class notes or other subjects.

INTRODUCING THE INQUIRY NOTEBOOK

I introduce the inquiry notebook during the first week of the semester. My syllabus includes a description of the project and its role in the course. We establish ground rules for the entries, so expectations are clear. I

include the following statement in my syllabus or on an assignment sheet:

Inquiry Notebook (20%): The inquiry notebook is a space to wonder and think critically. Prompts will be provided weekly. See the course schedule for collection dates.

Instructors might modify this statement by suggesting a particular theme. The first statement might be written as, “Think critically about how you learn English” or “Think critically about sustainability.” I ask students to date each entry and record the prompt that was given in class to help identify the response when providing feedback and grading. The instructor also needs to keep track of topics for his or her own use and to provide students who are absent an opportunity to make up the assignment, if feasible.

The first task is to create a cover. Students can draw, select a quote, or find a picture to use as their cover page and represent the theme of the inquiry notebook. This task tailors the notebook to the student and encourages individual expression. If your class emphasizes a content area, then learners could draw something to show what the content area means to them. Learners could also be asked to draw themselves learning or as a superhero, create a self-portrait, draw a scene from their favorite book, or illustrate a favorite memory. Such prompts show learners that they can think critically in different ways. Practically, the cover page makes it easier to connect the notebook to the student for grading and distribution purposes.

I provide prompts weekly for multiple purposes. First of all, weekly writing turns a task into a habit. Secondly, topics can

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complement class activities or reflect current events. While I grade inquiry notebooks quarterly, I maintain accountability by tying topics to specific activities. It is much harder to think critically about a specific experience several weeks after it occurred. Lastly, entries are a means to scaffold knowledge. Prompts at the beginning of the week can introduce new concepts, while prompts at the end of the week help bring the ideas of the week to a close and transition into the next topic. Occasionally I provide a prompt following a particularly meaningful class period in addition to our regular weekly entry.

DEVELOPING AND SEQUENCING PROMPTS

A writing prompt developed by the teacher in response to or in preparation for class is a fundamental element of the inquiry notebook. Prompts should build on content, language, and behaviors developed in the classroom. I begin with low-stakes topics that introduce students to the concept of critical thinking within areas that are familiar to them. With first-year students, I often focus on the transition to college and their college experience. Other themes might include experiences learning English; align with units in the curriculum; or emphasize topics of particular interest to learners such as culture, globalization, and current events.

For example, I developed a high-school writing class around the theme of environmental sustainability. Students completed readings and written assignments outside of class and engaged in small-group

activities during class. I used prompts in a variety of ways: as an in-class writing task to prepare learners for the class activity, as an individual activity in preparation for group discussion, and as an opportunity to reflect on the activities of the class period. Teachers can begin by stating the prompt out loud to build listening comprehension and finish by writing the prompt on the board to help learners check for understanding.

Table 1 shows how prompts related to students' college experience might be sequenced over a semester.

Note that the prompts do not explicitly ask students to think critically, create, or problem solve. In the first three entries, students typically summarize or explain their experience. Mere summarizing, though, does not lead to the development of more-advanced skills; therefore, at the end of the third week, notebooks are collected for feedback purposes to guide learners as they transition from lower-level to higher-level thinking skills.

Thinking critically in the target language is challenging, as it increases cognitive load (Shehab and Nussbaum 2015). Over the course of the semester, prompts change (in either content or language) and become progressively more difficult. Prior to writing an inquiry-notebook entry, learners should process the content to ensure comprehension. Comprehension questions paired with small-group work and other activities help learners move from understanding-based responses to higher-order responses. In early

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Week	Prompt Topic
1	Why college?
2	What are your goals for this semester?
3	What are you really good at? How did you get really good at that?
<i>Inquiry notebook (entries 1–3) due for feedback</i>	
4	Reflect on the first month of your semester.
5	Getting involved on campus is as important to your long-term success as your grades are. Attend a campus activity, club meeting, etc. and write about the experience.
6	Give yourself a midterm class-participation grade. Use the rubric as a guide. Cite specific examples to show why you think you have earned this grade.
<i>Inquiry notebook (entries 1–6) due for midterm grading</i>	
7	Review your midterm grades. Were they what you expected? What will you do to maintain or raise your grades through the final weeks?
8	Schedule an appointment to talk with one of your professors. Write about your visit.
9	During Week 2, you set some goals for the fall semester. Write about your progress toward your goals.
10	What do students need to be successful at this school?
<i>Inquiry notebook (entries 7–10) due for feedback</i>	
11	Thinking about your strengths and goals can help you maintain motivation in the final weeks of the semester. Describe something you have done in the past that you are proud of, something you are currently doing well, and something you are excited about in the future.
12	Complete one of the statements below based on the reading we did this week. <ul style="list-style-type: none"> • What strikes me about the reading is ... • To better understand the reading, I would like to know ... • The idea I most take issue with is ... • The part that makes the most sense to me is ...
13	Go back to the goals you set at the beginning of the semester. Describe your progress toward the goals you set. What goals do you have going into next semester?
14	Reflect on your first semester and address the prompt, “If I knew then what I know now ...”
<i>Inquiry notebook (entries 7–14) due for final grading</i>	

Table 1. Example of weekly prompts and sequencing

entries, I often see responses that showcase understanding. Learners compare, give descriptions, or state main ideas. As they receive feedback from teachers or peers and gain experience with higher-order skills, learners apply knowledge, make inferences, find evidence to support generalizations, present and defend opinions, and propose alternatives. Learners build twenty-first-century skills and transfer them to different situations while engaging with the course content (Roux, Mora, and Tamez 2012; Laqaei and Mall-Amiri 2015).

The inquiry notebook, which offers alternative formats to express knowledge, gives all students the opportunity to show what they know about the topic, even if they cannot contribute to the class discussion. The entries also give me an opportunity to get to know a student on a personal level.

Prompts for different language levels and contexts

Prompts can be modified for context, content, and proficiency. Instructors should pay attention to the language level of the prompts and consider offering variations for multilevel classes. New vocabulary should be scaffolded into instruction well in advance of the prompt, as the primary objective of the lesson is to develop critical-inquiry skills. Table 2 shows how prompts can be modified

to accommodate language-level variation among students.

Additionally, consider the context of the situation. For the inquiry notebook to be effective, students need to feel safe writing about the topics you provide. As the instructor, I need to think carefully about my response to possibly sensitive material.

Finally, inquiry notebooks are not limited to university classrooms. Inquiry-based learning can be applied to primary- and secondary-school learners as well as adults. Educators can vary prompts and expectations based on the target audience. Developing twenty-first-century skills is an ongoing process. The earlier learners begin to develop these skills, the stronger their skill set will be in the future.

Prompts for special purposes

Prompts can be tied to readings, listening activities, guest speakers, and current events; they can also hold students accountable for completing preparatory work or serve as a comprehension check. A grammatically themed inquiry notebook might include prompts that scaffold more-complex sentence structures. Your prompts might include key vocabulary and concepts reflected throughout a unit. Instructors could use a written format for a think-aloud protocol reflecting on L2 learning experiences.

Original Prompt	Possible Prompt Modifications
Why college?	<ul style="list-style-type: none"> • Why did you decide to go to college? • Why is college important to you?
Reflect on the first month of your semester.	<ul style="list-style-type: none"> • How did your first month go? • Why do you think that is? • What would you do differently next time?
What strikes me about the reading is ...	<ul style="list-style-type: none"> • What do you find interesting about the reading? • What do you find memorable about the reading?
If I knew then what I know now ...	<ul style="list-style-type: none"> • What is something you have learned that you would like others to know? • If you could go back in time, what would you do differently?
How do you learn English?	<ul style="list-style-type: none"> • What is the best way for you to learn vocabulary? • How do you know your technique works? • What other study strategies could you use? • What would you do if your method stopped working?

Table 2. Examples of prompt modifications for different language levels

Special Purpose	Prompt
Introducing the inquiry notebook	<ul style="list-style-type: none"> An inquiry notebook is a place to wonder, explore, and think critically. What ideas would you like to investigate? What does it mean to think critically? How might you use this skill in learning? If you could learn more about anything, what would it be? What goals do you have for this semester? How do you learn?
Understanding language learning	<ul style="list-style-type: none"> How do you learn English? What strategies do you use? What makes learning English challenging? Why did you decide to study English? How might you use an inquiry notebook to improve your English? In what situations would you use <i>[insert grammatical structure or language concept]</i>? As you look back at the semester, how has your use of English changed?
To access prior knowledge	<ul style="list-style-type: none"> How have you experienced [X]? What does [X] look like in your home or community? When you think about [X], what comes to mind? What do you know about [X]? What can we do to solve or improve [X]?
In response to a class activity, video, or text	<ul style="list-style-type: none"> What do you find interesting about [X]? “I would like to know more about . . . ” In five years, how might [X] change? What question would you like to ask the author/character? Why? What does the author want you to know? What is the most important message from today? How is this relevant to you? How does [X] connect to [Y]?
To build an inquiry: questions to ask yourself	<ul style="list-style-type: none"> What do I already know about [X]? What do I want to know? How would I find out? What is a possible answer? Where can I learn about this? How do I know if the author/source is credible? What are the next steps? What do I want others to know? How would I explain this differently to different people? What is important? What is unclear? What else do we need to find out? Why would someone agree/disagree with me? What might the consequences be? What would happen if [X]?
Inquiry notebook wrap-up	<ul style="list-style-type: none"> Reflect on your semester. What went well for you? What would you do differently? What would you like to learn more about? How do you think you will use [X] from the class in the future?

Table 3. Prompts for special purposes

Table 3 highlights prompts for different purposes. (Note that the [X] and [Y] variables give educators the opportunity to modify questions based on topics introduced in their individual classroom.)

For novice learners, the inquiry notebook may take more of a visual format or be adapted to use lists rather than sentences. For example, learners may show how a topic is personally

relevant by drawing something they have done or by finding a photograph that relates a similar experience. Illustrations can be accompanied by brief descriptions that connect the visual image to the prompt to build language skills.

FEEDBACK AND ASSESSMENT

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transition from informative, summary-based responses to entries that highlight higher-order thinking skills. In a typical semester, there are four collection points where I provide feedback and assess work (see the schedule in Table 1). This helps students learn accountability for completing entries on their own time at their own pace. Twice I collect notebooks for compliance, typically covering entries 1–3 and 7–10. Twice I collect entries for quality—generally following entries 4–6 and 11–14. At the compliance stage, my goal is for learners to apply feedback when they write future entries. At the quality stage, I am looking to see if learners transferred feedback from previous entries into subsequent work. Grading at the compliance stage is based on whether the entries are complete, not how well they are completed, using the three categories in Table 4.

At the compliance stage, learners have the opportunity to modify entries before they are graded for quality. They can add information at the bottom of the page, continue the response on the next open page, or rewrite the entry. I ask learners not to erase prior responses, although they may cross out items they wish to delete, so I can see what changed. In my experience, few students take advantage of the opportunity to revise their entries, so I have not been concerned that revising will significantly increase my workload as a teacher. Most learners focus on writing future entries.

Feedback is provided to help students develop their critical-thinking skills. I pose questions that cause students to probe more deeply into the experience. I may ask students to give an example, explain the significance of their response, or share what they learned. I also probe to find out why their response is important to them as an individual, to their experience, and to the experience of others. We discuss how they can incorporate this level of thinking as they move forward. Learners may receive feedback on individual entries or cumulative feedback at the end of the series of responses. I use cumulative feedback when development is needed across entries. If, for example, one entry is strong, I may comment, “You do a great job providing examples and explaining the significance of your response in entry 2. Use this entry as an example as you revise entries 1 and 3.” Depending on the complexity of the feedback, written comments can be complemented with individual conferences or class sessions where students are prompted to provide deeper responses through a series of questions like, “Why did you say that?” and “Where is this idea coming from?”

At midterm and finals, I grade notebooks for quality, using the rubric in Table 5. Because I want to assess twenty-first-century skills, my rubric uses the cognitive-skill hierarchy in Bloom’s Taxonomy (Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation) as a guide. In order to provide timely assessment, I do not give

Not Compliant	Partially Compliant	Compliant
Not submitted	Submitted late and/or incomplete	All entries are completed and submitted on time.

Table 4. Rubric for formative feedback at the compliance stage

formative written feedback at midterm or final grading. I identify where the work fits on the rubric and assign the appropriate score. Learners then have the option to meet with me for personalized feedback.

In Table 5, note that the “Does not meet expectations” grade indicates that the notebook entries focus only on the recollection of facts, provide basic knowledge, or explain ideas or concepts. Entries that meet expectations add a level of support by providing examples and applying topics to learners’ experience. “Experience” can be defined as a class experience, an individual experience, or an experience that extends to a broader audience. Application to personal experience is a good way to introduce critical-thinking concepts to learners. Stronger entries add an explanation of significance, which could be phrased as, “Why is this important?” The difference between exceeding and far exceeding expectations is consistency.

Since this project is designed to develop twenty-first-century skills, I do not correct spelling or grammar, but I will ask questions to clarify meaning. I comment on language only if it interferes with my comprehension of the idea. An alternative to providing grammatical feedback is to develop lessons in preparation for the writing students will do in the inquiry notebook and/or in response to the errors produced in the entries. If a number of students create similar errors, then the entire class would benefit from review. While it is more labor intensive to produce lessons from authentic language

production, learners are more likely to transfer the skill to their own work (ACTFL 2019).

CONCLUSION

Teachers who use inquiry notebooks will see how twenty-first-century skills progress over a period of time:

- Creativity and imagination develop through prompts that ask learners to propose alternatives and predict results.
- Critical thinking increases when learners apply what they learn to different situations, analyze content, and evaluate outcomes.
- Information literacy develops when tying prompts to course content.
- Learners take initiative by applying what they learned to different situations.
- The process of writing weekly entries strengthens learners’ written communication skills.
- Scaffolding and formative feedback give learners the opportunity to close the development gap between their language proficiency and their ability to express themselves critically in the target language.

In the twenty-first-century classroom, the aim is to build language proficiency and higher-order thinking skills through activities that

Does Not Meet Expectations	Meets Expectations	Exceeds Expectations	Far Exceeds Expectations
Focuses on remembering or understanding (i.e., only summarizes what was done).	In most entries ... Applies what was learned to experiences. Provides examples to support application of information.	In most entries ... Applies what was learned to experiences. Provides examples to support application of information. Explains significance.	In all entries ... Applies what was learned to experiences. Provides examples to support application of information. Explains significance.

Table 5. Midterm and final grading rubric for summative feedback

In the twenty-first-century classroom, the aim is to build language proficiency and higher-order thinking skills through activities that integrate both skill sets.

integrate both skill sets. This is a challenging task for all parties. An inquiry notebook is one way to integrate language development with critical-thinking skills to develop a successful twenty-first-century English learner.

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Kelly Wonder, EdD, is a former Senior English Language Fellow. Her research interests include student engagement, alternative assessment, and twenty-first-century skills.