

HOW TASK ANALYSIS FOSTERS EQUITY AND ACCESSIBILITY FOR MULTILINGUAL LEARNERS

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ABSTRACT

Analyzing academic language demands through systematic task analysis is imperative for fostering equitable and accessible education, particularly for multilingual learners (MLs). In today's world, characterized by linguistic diversity, educational systems must adapt to meet the needs of students from varied linguistic backgrounds. This article underscores the pivotal role of task analysis in identifying and addressing academic language demands, thereby promoting equity and accessibility in education. Task analysis involves meticulously examining the language requirements embedded within diverse academic tasks. For MLs, these language demands pose significant challenges, hindering their comprehension, engagement, and academic success if left unaddressed. By conducting thorough task analyses, educators can pinpoint linguistic barriers and develop targeted interventions to bridge language gaps, fostering a more inclusive learning environment. Task analysis emerges as crucial, providing insights into the linguistic intricacies inherent in academic tasks across various subject areas. Furthermore, task analysis facilitates the design of culturally responsive and linguistically accessible instructional materials, ensuring that language acts as a scaffold rather than a hindrance to academic achievement. This paper presents a comprehensive task analysis process for identifying and dissecting content, cognitive, and academic language demands within academic tasks. By following this guide, educators can effectively tailor instructional strategies and materials to address the diverse linguistic needs of MLs, thereby promoting equitable and accessible educational practices. Through continuous reflection and iteration, educators can refine their approaches to meet the evolving needs of MLs, ultimately fostering an educational environment where language serves as a bridge to success for all.

Keywords: Task analysis, Academic language demands, Equity, Multilingual learners, Accessibility

INTRODUCTION

In a world increasingly interconnected, classrooms contain a richness of linguistic diversity. From bustling megacities to remote villages, students representing many languages and cultures learn side-by-side. This tapestry of voices presents both a challenge and an opportunity for educators. To ensure all students have equal access to academic success, educators must be explicit with designing learning experiences that provide equitable access to the specialized language of schooling, specifically the language of academic subjects.

Imagine a student fluent in Spanish trying to grasp the nuances of a scientific experiment described with the informational density and recontextualized school science presented in English (Fang, 2006). Understanding these academic language demands (Cummins & Yee-Fun, 2007), in the form of discourse, syntax and lexical demands, through a comprehensive task analysis is more than just good practice – it's essential for achieving equity and accessibility in education. By identifying the linguistic hurdles faced by multilingual learners (MLs), educators can tailor instruction to be linguistically and culturally responsive. This not only empowers MLs to excel academically, but also sends a powerful message – that their unique voices and cultural backgrounds are valued assets in the learning environment. The broader implications of this approach extend far beyond individual classrooms.

Here's where task analysis steps in as a powerful tool. By meticulously breaking down academic tasks into their parts, educators can pinpoint the precise language demands students encounter. Starting with a deconstruction of content standards, and content objectives, and leading to a critical examination of what the teacher is explicitly asking the student to listen to, read, speak of, and write, this analysis isn't just about vocabulary lists – it delves into the intricate world of discourse, examining how ideas are connected within a text, and syntax, the way sentences are structured.

At its core, task analysis systematically examines the language requirements embedded within various academic tasks (Arbaugh & Brown, 2005; Tekkumru-Kisa, et al., 2015). Academic tasks have inherent language components that go beyond basic communication. Understanding these language demands is essential for educators, curriculum developers, and instructional designers (Tekkumru-Kisa, et al., 2015). For MLs, these language demands pose significant challenges, affecting their ability to access and gain knowledge, comprehend, engage, and excel in academic settings if the educators are unaware of them and, therefore, do not address them. By conducting a thorough task analysis, educators can pinpoint specific linguistic barriers that may impede multilingual learners' progress (Mislevy et al., 2002; Railble, 2020). This proactive approach enables the development of targeted interventions and instructional strategies that respond to language learning needs, promoting a more inclusive learning environment.

Equity in education demands a recognition of the diverse linguistic backgrounds students bring to the classroom. Multilingual learners often face linguistic hurdles that extend beyond basic communication. Academic language, characterized by its specialized vocabulary, complex syntax, and nuanced discourse structures, becomes a formidable barrier for many students (Zwiers, 2008). Task analysis becomes a crucial tool in dismantling these barriers by providing a nuanced understanding of the language demands within different academic contexts and subject areas. Moreover, task analysis serves catalyzes designing instructional materials that are not only culturally responsive but also linguistically accessible. By dissecting tasks into their linguistic components, educators can tailor teaching materials to align with the specific language needs of multilingual learners. This customization fosters an environment where language is not a hindrance but a scaffold for academic success.

Accessibility in education is intrinsically linked to providing all students, regardless of linguistic background, with an equal opportunity to thrive. Task analysis plays a pivotal role in creating accessible learning experiences by shedding light on the linguistic intricacies inherent in academic tasks. This knowledge empowers educators to implement targeted language support mechanisms, such as explicit language instruction, vocabulary development, and collaborative learning strategies that accommodate diverse linguistic abilities.

Furthermore, the benefits of task analysis extend beyond the immediate classroom setting. Educational policymakers can leverage the insights gained from task analyses to inform curriculum development, assessment design, professional development and teacher training programs (Tekkumru-Kisa, et al., 2015; Wolf et al., 2023). This systemic approach ensures that equity and accessibility are integrated into the broader educational framework, creating sustainable and inclusive practices that benefit multilingual learners throughout their academic journey.

An instructional task analysis for identifying academic language demands is an essential and proactive step toward building an equitable and accessible educational landscape for multilingual learners. By dissecting the linguistic intricacies embedded within academic tasks, educators can design targeted interventions, create linguistically responsive materials, and contribute to systemic changes that prioritize the diverse linguistic needs of students. Ultimately, this approach fosters an educational environment where language is not a barrier but a bridge to success for all learners, irrespective of their linguistic background.

LITERATURE REVIEW

Current methods to identify academic language demands in educational settings typically encompass standardized assessments, language proficiency tests, and teacher observations. While these approaches offer valuable insights, they are not without limitations. Standardized assessments, commonly utilized for evaluating student performance, may lack the specificity needed to fully capture the nuanced language demands inherent in various academic subjects and proficiency levels (Mislevy et al., 2002). Often focusing on general language skills, these assessments may overlook the intricate language requirements specific to content-area subjects such as science, mathematics, or history. Consequently, they may not sufficiently inform instructional planning tailored to address the diverse linguistic needs of students (Abedi, 2010).

Similarly, language proficiency tests, though instrumental in gauging overall language proficiency levels, may lack the granularity necessary to delineate the specific language demands within academic contexts. These tests may overlook the detailed language skills essential for success in specific academic tasks, such as deciphering complex scientific texts or composing analytical essays (Bailey & Carroll, 2015). Bailey & Carroll's (2015) review of classroom-level assessment practices for ongoing instructional purposes underscores the importance of pinpointing the specific English language skills needed for success in different academic settings. Through task analysis, educators can break down these academic tasks and identify the common threads – the specific vocabulary, sentence structures, and language functions (like explaining, describing, or comparing) used across subjects. Yi Lo & Fung (2020) examination of assessment demands in both content and language aspects shines a light on a critical gap in teacher instructional knowledge and skills. Subject-area educators need to devote more focus to the language component within assessments. Wilkinson (2019) emphasizes that assessing and instructing MLs in math shouldn't just focus on vocabulary. Their review highlights the complex relationship between language and math, suggesting a more comprehensive approach. Instead, explore the role of syntax (sentence structure) and textual organization in mathematical communication.

While valuable for providing real-time insights into student performance, teacher observations are subject to individual teacher subjectivity and may vary based on teacher expertise and experience. Moreover, the constraints of time and resources may limit the extent to which teachers can conduct comprehensive observations across all academic subjects and language domains. Teacher needs to develop the skills to address the linguistic skills of MLs (Short & Echeverria, 2005).

Recognizing these inherent limitations, task analysis emerges as a compelling necessity to complement existing approaches to identifying academic language demands. Task analysis involves deconstructing complex academic tasks into manageable components to identify the language skills requisite for successful task completion systematically as well as student experience and prior knowledge (Campbell et al., 2007). By scrutinizing the language demands inherent in various standards and academic tasks, educators can cultivate a nuanced comprehension of students' specific linguistic hurdles across diverse content areas (Wolf et al., 2023). Task analysis furnishes educators with a structured framework for pinpointing the vocabulary, syntax, discourse structures, and language functions indispensable for students to comprehend and produce academic texts proficiently. This detailed comprehension of language demands enables the design of targeted instructional strategies, materials, and assessments tailored to address the linguistic needs of students across various academic contexts.

In the quest for equitable education, educators confront the formidable task of dismantling linguistic barriers that pose significant challenges for MLs. This section delves into how task analysis synergizes with diverse educational theories, fortifying educators in this noble endeavor. Critical pedagogy stands as a steadfast advocate for dismantling entrenched power structures, and task analysis emerges as a potent ally in this fight by illuminating language demands that unfairly burden MLs. Funds of Knowledge underscores the immense value inherent in students' diverse backgrounds, and task analysis empowers educators to harness and amplify existing language skills, fostering a more inclusive learning environment. Sociocultural theory underscores the pivotal role of cultural context in learning, and task analysis serves as a guiding light in crafting culturally relevant learning environments that resonate with the Zone of Proximal Development (ZPD) of MLs. Moreover, language acquisition theories, such as

Krashen's Input Hypothesis (Krashen, 1992) and Cummins' BICS/CALP framework (Cummins, 2000), underscore the critical distinction between conversational and academic language. Task analysis seamlessly aligns with these theories by enabling educators to pinpoint the precise academic language demands, thus facilitating targeted instruction essential for MLs' successful acquisition of academic language skills. By weaving together these theoretical underpinnings, task analysis emerges as an indispensable tool in educators' arsenal, empowering them to dismantle linguistic barriers and forge pathways to equitable education for all learners.

Critical Pedagogy (Freire)

Critical pedagogy questions and challenges inequitable educational power structures (Freire, 1970). Critical pedagogy emphasizes tasks that go beyond simple recall of facts and encourage analysis, synthesis, and argumentation. This requires students to engage in complex thinking, critical analysis, and effective communication. Task analysis serves as a tool within a critical pedagogical framework, enabling educators to identify and address language demands that may disproportionately affect multilingual learners. Similarly, Crookes & Ziegler (2021) suggest that task-based language teaching (TBLT) and critical language pedagogy (CLP), which integrates Freire's theory of critical pedagogy, are complementary approaches. By combining them, educators can create a more well-rounded and engaging learning experience for MLs. CLP can benefit from TBLT's structured tasks, while TBLT can benefit by integrating a critical lens into tasks and curriculum. This combined approach embodies the idea that equitable education involves recognizing and dismantling linguistic barriers perpetuating educational inequalities.

Funds of Knowledge

Leveraging diverse linguistic backgrounds hinges on activating relevant prior knowledge (schemas) to make sense of new information. This Funds of Knowledge theory (Moll et al., 1992) emphasizes the value of students' cultural and linguistic backgrounds as resources for learning (Yosso, 2015). Task analysis helps educators identify the language skills MLs already possess and build upon those strengths. By incorporating their home languages strategically, educators can create a more inclusive learning environment and empower MLs to participate actively.

Sociocultural Theory (Vygotsky)

Vygotsky's sociocultural theory emphasizes the importance of social interaction and cultural context in learning (McLeod, 2020). Applying this, task analysis helps educators understand the linguistic and cultural nuances embedded in academic tasks, allowing them to create learning environments that align with the sociocultural backgrounds of multilingual learners. This theory underscores the idea that effective language instruction must be culturally relevant to promote equitable learning experiences.

Linked to Vygotsky's theory, the ZPD concept highlights the range of tasks a learner can perform with the help of a more knowledgeable person. Task analysis, by identifying specific language demands, allows educators to scaffold instruction within the ZPD of multilingual learners, providing targeted support to bridge linguistic gaps. This framework reinforces the idea that equitable education requires a tailored approach that considers learners' current abilities and potential for growth. This ensures MLs are challenged but not overwhelmed, promoting language acquisition and academic success.

Language Acquisition Theories (Krashen, Cummins)

Language acquisition theories, such as Krashen's Input Hypothesis and Cummins' BICS (Basic Interpersonal Communication Skills) and CALP (Cognitive Academic Language Proficiency), underscore the distinction between conversational and academic language (Cummins, 1979; Krashen & Brown, 2007). Task analysis aligns with these theories by helping educators pinpoint the academic language demands, allowing for targeted language instruction to develop the cognitive academic language proficiency crucial for academic success. By grounding this argument in these theoretical frameworks, a robust foundation for understanding the interplay between language, culture, and

learning reinforces the need for tailored approaches that address the specific linguistic demands within academic tasks.

PROCESS

The following task analysis involves a process to identify and dissect the content demands, cognitive demands, and academic language demands of a specific academic task.

The following is a step-by-step guide for teachers to conduct a task analysis:

1. Select the Academic Task
 - a. Choose a specific academic task that students are expected to perform. This could be a reading assignment, a writing task, a math problem-solving activity, or any other academic exercise.
2. Identify and Analyze the Content Demands
 - a. Clearly articulate the learning objectives associated with the chosen task. What understandings, skills, or knowledge are students expected to gain from completing the task? This step provides a foundation for understanding the purpose of the task.
 - b. Examine the content demands by breaking down the task into its constituent elements. Identify the key concepts, facts, and information students need to comprehend to successfully complete the task. This step helps in understanding the subject-specific requirements of the task.
3. Identify and Analyze Cognitive Demands
 - a. Explore the cognitive processes required for the task. Consider the thinking skills involved, such as analysis, synthesis, problem-solving, and critical reasoning. Identify the mental operations students must engage in to achieve the learning objectives. This step provides insights into the cognitive complexity of the task.
4. Identify and Examine Academic Language Demands
 - a. Delve into the language demands inherent in the task. Identify the specialized vocabulary, language structures, and discourse features specific to the academic context. Consider the language skills required for reading, writing, listening, and speaking within the task. This step helps in understanding the linguistic challenges students may encounter.
5. Identify Language Uses
 - a. Using the WIDA Standards Key Language Uses identify what students are using the language for.
 - i. **Narrate** highlights language to convey real or imaginary experiences through stories and histories. Narratives serve many purposes, including to instruct, entertain, teach, or support argumentation.
 - ii. **Inform** highlights language to provide factual information. As students convey information, they define, describe, compare, contrast, organize, categorize, or classify concepts, ideas, or Phenomena.
 - iii. **Explain** highlights language to give an account for how things work or why things happen. As students explain, they substantiate the inner workings of natural, man-made, and social phenomena.
 - iv. **Argue** highlights language to justify claims using evidence and reasoning. Arguments can be used to advance or defend an idea or solution, change the audience's point of view, bring about action, or accept a position or evaluation of an issue.
 - b. Identify Language Functions
6. Focus on the **communicative purpose** of language use, the **why** behind what students will say or write.
 - a. Identify Language Forms

Deal with the **building blocks** used to convey those communicative purposes. It represents the **how** of communication. Language forms include:

- i. Grammar: Like verb tenses, sentence structures, and punctuation.
- ii. Vocabulary: The specific words you choose.
- iii. Discourse structures: How sentences are organized into paragraphs and larger texts.

7. Consider Cultural and Contextual Factors

Recognize cultural and contextual factors that may impact students' understanding of the task. Consider how background knowledge and cultural experiences might influence comprehension. This step helps in designing culturally responsive instructional strategies.

8. Develop Supportive Materials

Based on the analysis, create or modify instructional materials that address the identified content, cognitive, and language demands. Design materials that scaffold learning and provide necessary support for multilingual learners.

9. Implement Instructional Strategies

Integrate instructional strategies that explicitly address the identified demands. This may involve explicit language instruction, modeling cognitive processes, and providing opportunities for meaningful practice. Implement strategies that align with the learning objectives and accommodate diverse learner needs.

10. Reflect and Iterate

Continuously reflect on the effectiveness of instructional strategies and materials. Gather feedback from students, monitor their progress, and be prepared to iterate on the task analysis based on observations and assessments.

By following this systematic task analysis process, teachers can gain a nuanced understanding of the content, cognitive, and academic language demands associated with a specific academic task. This, in turn, empowers educators to create targeted and equitable learning experiences for all students, including multilingual learners.

DISCUSSION AND CONCLUSION

The fight for educational equity for multilingual learners (MLs) demands a proactive dismantling of linguistic barriers. Task analysis transcends being a mere tool; it becomes a weapon in this fight. It empowers educators to become architects of inclusive learning environments, not by lowering expectations, but by strategically deconstructing academic tasks.

By dissecting the intricate language demands – vocabulary, syntax, discourse structures – educators pinpoint the exact hurdles MLs face. Armed with this knowledge, they can craft targeted interventions that bridge these linguistic gaps. Imagine a classroom where vocabulary isn't a mystery, sentence structures become stepping stones, and academic discourse transforms into a tool for critical thinking – a reality achievable through task analysis. While Reinder (2010) does not directly investigate instructional task analysis, the study provides strong supporting evidence for why teachers should learn this skill. Here's how. Reinder (2010) emphasizes that the type of task given to students significantly impacts their second language acquisition (SLA). This implies that simply assigning any activity won't be equally effective. Reinders' (2010) research likely delve into how different instructions accompanying tasks can influence learning outcomes. This highlights the importance of carefully designing and analyzing tasks to maximize learning potential. By studying the impact of task types, the research implicitly encourages understanding the specific language skills and knowledge required for different tasks. This aligns with the goal of instructional task analysis, argued for in this article, which is to identify these very demands. While Reinder's (2010) study doesn't offer a step-by-step guide on conducting task analysis, it highlights the critical role of understanding task demands in promoting effective SLA. This knowledge base is essential for teachers who want to design tasks that truly benefit their multilingual learners (MLs).

Accessibility isn't just about equal opportunity; it's about dismantling the notion of disadvantage based on language. Task analysis unlocks this potential. It allows educators to weave cultural context and lived experiences of MLs into the fabric of learning materials. This fosters not just comprehension but

deep engagement where learning materials resonate with students' backgrounds, igniting a passion for knowledge that transcends language barriers.

This granular analysis isn't just about efficiency; it's about equity. Further research in task analysis is not simply desirable – it's essential. By systematically exploring the intricate relationship between tasks and language demands, we can empower educators to create inclusive classrooms where all students, regardless of their native language, can thrive. The impact of task analysis extends far beyond the classroom walls. By informing task and assessment design, complexity, curriculum development, second language acquisition, and teacher training, it shapes the very foundation of educational practice (Gilbert, 2007; Wickens, 2007). Task analysis is not just a technique; it's a revolution in the making. It empowers educators, transforms classrooms, and informs policy. It dismantles linguistic barriers, fosters cultural connection, and paves the way for truly accessible and equitable learning, regardless of native tongue.

LIMITATIONS

While task analysis offers valuable insights into academic language demands and contributes to fostering equitable and accessible education for multilingual learners, several limitations should be acknowledged. Task analysis, like any methodology, may be susceptible to biases inherent in the individuals conducting the analysis. Educators' personal experiences, cultural backgrounds, and linguistic competencies could influence their interpretations of academic language demands, potentially leading to biases in the identification and prioritization of specific language skills. The effectiveness of task analysis relies heavily on educators' training and expertise in conducting thorough analyses. Educators with limited experience or training in task analysis may struggle to identify nuanced language demands accurately, which could compromise the quality of instructional strategies and materials developed based on the analysis. Task analysis typically focuses on specific academic tasks or content areas, which may result in overlooking broader systemic issues impacting multilingual learners. While task analysis provides valuable insights at the micro-level, it may not adequately address macro-level factors such as institutional policies, resource allocation, and sociocultural contexts that influence language acquisition and academic achievement.

Academic tasks and language demands may evolve over time due to changes in curriculum standards, educational policies, or societal contexts. Task analyses conducted at a particular point may become outdated, necessitating regular reviews and updates to ensure alignment with current educational needs and expectations. Conducting comprehensive task analyses requires significant time, expertise, and resources, which may pose challenges for educators and educational institutions, particularly those with limited funding or support. Resource constraints could limit the frequency or depth of task analyses, potentially hindering efforts to address the diverse linguistic needs of multilingual learners effectively. While task analysis emphasizes the identification of academic language demands, it may inadvertently prioritize language skills over other factors influencing multilingual learners' academic success, such as socioemotional support, cultural affirmation, and access to resources. A holistic approach to supporting multilingual learners should consider a broad range of factors beyond language proficiency alone.

Addressing these limitations requires ongoing research, collaboration, and reflexivity within educational communities. By critically examining the validity and reliability of task analysis methodologies, providing targeted professional development for educators, and integrating multiple sources of data and perspectives, stakeholders can enhance the efficacy of task analysis as a tool for promoting equitable and accessible education for multilingual learners. Moreover, fostering a culture of transparency, reflexivity, and continuous improvement in task analysis practices can help mitigate biases and ensure that analyses accurately reflect the diverse linguistic needs of students in today's educational landscape.

REFERENCES

- Abedi, J. (2010). Performance assessments for English language learners. Stanford University, Stanford Center for Opportunity Policy in Education.
- Arbaugh, F., & Brown, C. A. (2005). Analyzing mathematical tasks: A catalyst for change. *Journal of Mathematics Teacher Education*, 8(6), 499–536.
- Bailey, A. L., & Carroll, P. E. (2015). Assessment of English Language Learners in the Era of New Academic Content Standards. *Review of Research in Education*, 39, 253–294. <http://www.jstor.org/stable/44668659>
- Campbell, A. E., Davis, G. E. & Adams, V. M. (2007). Cognitive Demands and Second-Language Learners: A Framework for Analyzing Mathematics Instructional Contexts, *Mathematical Thinking and Learning*, 9(1), 3-30, DOI: 10.1080/10986060709336603
- Crookes, G.V. & Ziegler, N. (2021) Critical language pedagogy and task-based language teaching: Reciprocal relationship and mutual benefit. *Education Sciences*, 11, 254. <https://doi.org/10.3390/educsci11060254>
- Cummins, J. (1979). Linguistic interdependence and the educational development of bilingual children. *Review of Educational Research*, 49, 222–251.
- Cummins, J. (1981). The role of primary language development in promoting educational success for language minority students. In the California State Department of Education (Ed.). *Schooling and language minority students: A theoretical framework* (pp. 3–49). Los Angeles, CA: National Dissemination and Assessment Center.
- Cummins, J. (2000). *Language, power, and pedagogy*. Multilingual Matters, Ltd.
- Cummins, J. (2012). The intersection of cognitive and sociocultural factors in the development of reading comprehension among immigrant students. Reading and S.C. Chung et al. *Journal of Neurolinguistics* 50 (2019) 149–161
- 158 Writing: An Interdisciplinary Journal, 25, 1973–1990.
- Cummins, J., & Yee-Fun, E.M. (2007). Academic Language. In: Cummins, J., Davison, C. (eds) *International Handbook of English Language Teaching*. Springer International Handbooks of Education, vol 15. Springer. https://doi.org/10.1007/978-0-387-46301-8_53
- Fang, Z. (2006) The Language Demands of Science Reading in Middle School, *International Journal of Science Education*, (28)5, 491-520, DOI:10.1080/09500690500339092
- Freire, P. (1970). *Pedagogy of the oppressed*. Penguin Random House.
- Gilabert, R. (2007). Effects of manipulating task complexity on self-repairs during L2 oral production*. *IRAL, International Review of Applied Linguistics in Language Teaching*, 45(3), 215-240. <https://doi.org/10.1515/iral.2007.010>
- Hayo Reinders, A. (2010). *The Effects of Task Type and Instructions on Second Language Acquisition*. Cambridge Scholars Publishing.
- Krashen, S. (1981). Second language acquisition. *Second Language Learning*, 3(7), 19-39.
- Krashen, S. (1992). The input hypothesis: An update. *Linguistics and language pedagogy: The state of the art*, 409-431.
- Krashen, S., & Brown, C. L. (2007). What is academic language proficiency? *STETS Language & Communication Review*, 6(1), 1-5.
- McLeod, S. (2020) Vygotsky's sociocultural theory of cognitive development. *Simply Psychology*. Retrieved from <https://www.simplypsychology.org/vygotsky.html>
- Mislevy, R. J., Steinberg, L. S., & Almond, R. G. (2002). Design and analysis in task-based language assessment. *Language Testing*, 19(4), 477-496. <https://doi.org/10.1191/0265532202lt241oa>
- Moll, L. (2005). Reflection and possibilities. In N. Gonzalez, L. C. Moll, & C. Amanti (Eds.), *Funds of knowledge: Theorizing practices in households, communities and classrooms* (pp. 275-287). Lawrence Erlbaum.
- Moll, L., Amanti, C., Neff, D., & Gonzalez, N. (1992). Funds of knowledge for teaching: using a qualitative approach to connect homes and classrooms. *Theory Into Practice*, 31(2), 132e141
- Raible, J. (2020) Introduction to Instructional Design. Licensed under a [Creative Commons](https://creativecommons.org/licenses/by/4.0/).
- Robinson, P., & Gilabert, R. (2007). Task complexity, the Cognition Hypothesis and second language learning and performance. *IRAL, International Review of Applied Linguistics in Language Teaching*, 45(3), 161-176. <https://doi.org/10.1515/iral.2007.007>
- Short, D., & Echevarria, J. (2005). Teacher skills to support English language learners. *Educational Leadership*, 64(2), 8-13.

- Tekumru-Kisa, M., Stein, M.K. and Schunn, C. (2015), A framework for analyzing cognitive demand and content-practices integration: Task analysis guide in science. *Journal of Research in Science Teaching*, 52, 659-685. <https://doi.org/10.1002/tea.21208>
- Wickens, C. D. (2007). Attention to the second language. *IRAL, International Review of Applied Linguistics in Language Teaching*, 45(3), 177-191. <https://doi.org/10.1515/iral.2007.008>
- Wilkinson, L. C. (2019). Learning language and mathematics: A perspective from linguistics and education. *Linguistics and Education*, 49, 86-95.
- Wolf, M. K., Bailey, A. L., Ballard, L., Wang, Y., & Pogossian, A. (2023) Unpacking the language demands in academic content and English language proficiency standards for English learners, *International Multilingual Research Journal*, 17:1, 68-85, DOI: [10.1080/19313152.2022.2116221](https://doi.org/10.1080/19313152.2022.2116221)
- Yi Lo, Y. & Fung, D. (2020). Assessments in CLIL: the interplay between cognitive and linguistic demands and their progression in secondary education, *International Journal of Bilingual Education and Bilingualism*, (23)10, 1192-1210, DOI:10.1080/13670050.2018.1436519
- Yosso, T. J. (2005). Whose culture has capital? A critical race theory discussion of community cultural wealth. *Race, ethnicity and education*, 8(1), 69–91. DOI: <https://doi.org/10.1080/1361332052000341006>
- Zwiers, J. (2008). *Building Academic Language: Essential practices of content classrooms*. Wiley & Sons, Inc.

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