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# Overcoming Barriers to Sustainable Dissemination of L2 Learning Resources: An Integrated Framework for Creating and Distributing Dialogue Scenarios

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**Abstract:** Language learning resources, such as dialogue scenarios, are important for supporting second language (L2) learning by engaging learners in simulated conversations or role-plays. However, there are often barriers to the wider dissemination of these resources, including the lack of a standard format for distributing them, the difficulties of maintaining and updating them over time, and the need for effective means of tracking their use and impact. This paper presents an integrated framework for fostering the wider dissemination of L2 learning resources, with a focus on dialogue scenarios. The framework is designed to address the above challenges by providing a novel approach for creating and distributing dialogue scenarios, as well as a set of guidelines to ensure that they are pedagogically sound and compatible with learning management systems (LMS). The paper also discusses the potential benefits of the framework for L2 learners and educators and outlines future directions for the project.

**Keywords:** Dialogue Scenarios, L2 learning, Authoring interface, SCORM-compliance

## 1. Introduction

The Second language (L2) learning has the potential to be a transformative experience, opening up new opportunities for communication and cultural exchange. Yet, many learners are unable to access high-quality language learning resources due to financial, geographic, or technological barriers (Zimmerman, 2014).

On the other hand, the use of learning management systems (LMS) in education, and more specifically in computer-assisted language learning, has become increasingly common in recent years, as they provide a convenient platform for organizing and delivering course materials, managing assessments, gathering learning data, and facilitating communication between learners and instructors (Watson & Campana, 2017). In order for an LMS to be effective, it must be properly configured and populated with high-quality learning resources (Kataoka et al., 2018).

For instance, learning resources such as dialogue scenarios are an effective tool for L2 learning, as they can engage learners in simulated conversations or role-plays, helping them to develop their language skills and confidence in using the target language (Willis & Willis, 2007). Overall, the use of dialogue scenarios in L2 learning can support learners' communicative competence (Johnson & Valente, 2008), cultural awareness, and can contribute to a more effective and engaging language learning experience (Ayedoun et al., 2021). However, the distribution of these learning resources over LMS has historically been limited, with most being developed for a specific course or program and not widely available for reuse. In addition, the implementation of new dialogue scenarios requires a significant amount of knowledge engineering effort and expertise in dialogue design (Ayedoun et al., 2021), which can be a barrier to their wider dissemination in learning management systems

(LMS). Other barriers may include the lack of a standard format for distributing resources, the difficulties of maintaining and updating materials over time, and the need for effective means of tracking their use and impact.

In this paper, we present an integrated framework for overcoming these barriers and fostering the sustainable dissemination of L2 learning resources, with a focus on dialogue scenarios. The framework is designed to provide a standard format for creating and distributing resources, as well as a set of guidelines to ensure that they are pedagogically sound and compatible with learning management systems (LMS). Then, we discuss the potential benefits of the framework for L2 learners and educators and outlines future directions for the project.

## 2. Proposed Framework

We identified several key requirements for building a desirable Integrated Language Learning Support Framework (I2LSF) that puts educators at the heart of learning resources design for a more sustainable dissemination of L2 learning resources. We propose that such an integrated framework should ideally be flexible, collaborative, easy to use, analytics-driven, integrate with other tools, and inclusive. Additionally, it should have a sustainable plan, and focus on accessibility to all learners.

Moreover, we also anticipate that such a framework could lead to the development of cost-efficient intelligent tutoring systems (ITS) that have the ability to reach a large number of students while still maintaining a high level of personalization, adaptivity, and interactivity. In other terms, as ITS are scaled up and move beyond the standard three or four-component model, there is a potential for adaptation to users to occur at various levels of granularity. Previously, adaptation in tutoring systems was thought to consist of two main components: "macro-adaptivity" or the "outer loop", and "step-based adaptivity" or the "inner loop" (VanLehn, 2006). However, the I2LSF framework as proposed here, and fulfilling the prerequisites described above may also hold the potential for "meta-adaptivity" in which the system adapts to the user by directing them to a different language learning activity that may suit better learners' needs. Additionally, research on "micro-adaptivity" has explored the benefits of using learning data to fine-tune interactions at a level below the problem step, such as keystroke-level inputs, emotion detection, and the presentation and timing of feedback (Graesser, 2011). In the context of the I2LSF framework, we believe that micro-adaptivity may be achieved at the interaction level with the presentation of specific conversational feedbacks.

In sum, from the above and inspired by Nye's previous work on the potential of intelligent support systems to improve education in resource-constrained countries (Nye, 2015), we propose that a desirable learning support framework for creating and distributing learning resources in the context of L2 learning should feature the following four connected

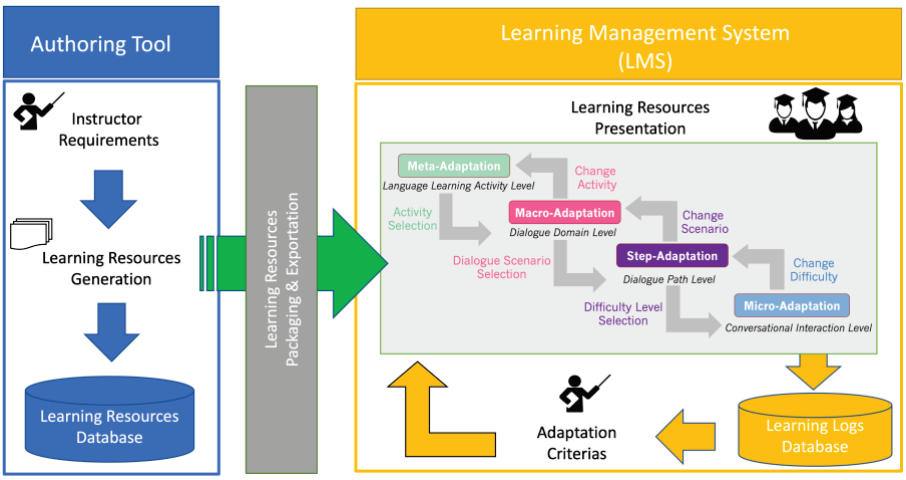


*Figure 1. Outlines of our proposed I2LSF with the four levels of adaptation.*

levels or loops of adaptivity: macro-adaptivity, step-based adaptivity, meta-adaptivity, and micro-adaptivity. These four loops are likely to remain important decision points for designers in the I2LSF, as they can be thought of as boundaries within the learning support system. In addition, each of these types of adaptivity has its own advantages and can be used to provide a more effective and efficient learning experience, by adjusting to the student's needs, preferences, and progress. Such an I2LSF could also be helpful to teachers in teaching language by providing them analytics on how the students are progressing and giving them suggestions on how to improve their teaching. On the other hand, incorporation of AI based techniques such as Adaptive learning, Self-generated data and Natural Language Processing can make the system more effective and efficient in the way it assesses the learner's progress and gives the feedback which can help the learner to identify his strong and weak areas.

In sum, from a theoretical point of view, if achieved, the I2LSF framework proposed in the context of study hold the potential to allow educators to deliver learning resources that can be adjusted and tailored to the individual needs and preferences of each student with user adaptation being carrying out at four levels, as depicted in Figure 1.

## 3. Potential and Future Directions

While our project is still in the early stages of development, we believe it has the potential to make a significant impact on the field of L2 learning and are excited to see how it evolves in the future. In addition to providing access to a larger number of high-quality resources, the framework has the potential to support the professional development of scenario authors by giving them a platform to share their work and receive feedback from their peers. Another advantage of the framework is that it makes learning resources available from anywhere with an internet connection, making language learning more convenient and accessible. It could also facilitate collaboration among authors and institutions, enabling the creation of more complex and nuanced scenarios that better reflect the diversity of L2 learners.

To evaluate the effectiveness of the proposed framework, we plan to conduct a series of case studies with a diverse group of L2 learners and educators. These experimental evaluations will examine the impact of the framework on learners' language skills and attitudes towards L2 learning, as well as the adoption and use of the platform by scenario authors.

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