

## The NDEI model in ELT materials development

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Paper received 21.12.21; Accepted for publication 12.01.22.

<https://doi.org/10.31174/SEND-PP2022-263X102-09>

**Abstract.** Today's classrooms require significant alterations in the teaching and learning process, especially in terms of autonomous components of learning and needs-based resources. Students should be able to connect what they learn in class to their real-life interests and needs. The article provides the Needs Assessment, Design, Evaluation, and Implementation (NDEI) model, which is a guideline on what steps should be taken to design tasks in an effective way. The aim of the article is to determine the correlation between contextualized tasks and vocabulary competency. The purpose of this essay is to see if using a model to create tasks is effective. In two control and two experimental groups, pre-, during, and delayed post-tests were utilized to collect statistical data, and tests were performed to assess the outcomes using a two-tailed quasi-experimental design. According to the findings, materials targeted to students' interests and needs had a significant influence on vocabulary competency.

**Keywords:** Vocabulary, materials development, model, contextualized tasks.

**Introduction.** Nowadays, the teaching approach should not emphasize just the group as a whole, but also individual students in the classrooms and their unique needs. It is worth noting that resources should fulfill the needs of both students and teachers. As a result, materials should match the teacher's personality as well as the learners' learning preferences. According to Richards (2001), "English teacher needs access to a good range of current textbooks, resource books, or materials in order to update their professional knowledge and get new ideas to feed into their teaching" (p.208). Not only do teachers need materials but learners also need real-life tasks, which are adjusted to the learner's individual needs and interests. It should be mentioned that needs-based tasks are a "diverse family of instructional strategies designed to more seamlessly link the learning of foundational skills and academic or occupational content by focusing teaching and learning squarely on concrete applications in a specific context that is of interest to the student" (Mazzeo, 2008, p. 4). It is noteworthy that learners link the needs-based task to their lives and they learn more effectively as contextualization activates schema in a human's brain. While focusing on contextualized tasks students relate one concept to another in the context (Tyler & Ortega, 2018).

**Materials and methods.** When creating materials that are based on learners' needs, real-life scenarios and needs-based tasks are helpful (Baker, Hope, & Karandjeff, 2009). The NDEI model is divided into four key phases: 1) Needs assessment and preparation; 2) Design; 3) Evaluation; 4) Implementation (See Table 1). While creating the contextualized tasks, these four phases should be followed.

All steps are subdivided into several sub-phases. The first step starts from needs analysis with the questions connected to the learner's preferences, needs, and interests. Needs analysis (NA) is crucial for each course as the materials should be adapted according to the information indicated in NA. Goals are set according to NA and textbook tasks are evaluated in the first step if the tasks are in accordance with the information given in NA.

Step II, which combines the sub-steps of materials development principles and contextualization, is particularly significant. Principles are given a lot of thought since they

make each activity meaningful to the learner. Each task should be relevant to the student and his or her specific interests and learning preferences while adhering to all standards. Not only the target language but also the incidental language is contextualized.

Most importantly, every task is evaluated. III step is connected to evaluation of the content of each task and its adjustment to the learner's needs. As for the last step, it is related to the implementation of the tasks and their usage in the classroom. This step is subdivided into several stages, where peer assessment, the autonomous learning component is included.

The NDEI paradigm and process allow students to concentrate on cognitive and meta-cognitive vocabulary acquisition strategies. Needs-based contextualized exercises improve the likelihood of schemata activation and provide learners with a pleasant surprise.

This research is in a two-tailed quasi-experimental format focusing on the impact of the NDEI model on students' vocabulary competency enhancement. In a two-tailed quasi-experiment, questionnaires with needs analysis elements and pre, post, and delayed post-tests were used. Totally 52 participants aged 18-20 were involved in all groups, 12 in 2 control groups, totaling 24, and 12 in 2 experimental groups, totaling 24. The convenient sampling was used as the participants were assigned to English language classes by one of the universities in Georgia. All of them took advanced level (C1) and used the same textbook, Keynote. The control groups followed the textbook while experimental groups replaced one vocabulary task using the NDEI model.

The participant's responses were only shared with them, not with a third party, and their confidentiality was protected as indicated in the informed consent form they completed.

Results. The hypothesis of this research is the following: learner needs and needs-based materials greatly impact students' vocabulary skills development. While the null hypothesis is that learner needs-based materials do not influence students' vocabulary skills. Pre-test, while-test one, while-test two, post-test, and a delayed post-test were analyzed using a dependent samples t-test (also known as a paired samples t-test) to test the hypothesis.

**Table 1.** The NDEI model in materials development (designed by the researcher)

NDEI MODEL	Goal & procedure & relevance
	Designing the survey
	Incorporating the needs analysis component in the survey
	Providing the survey in the control and experimental groups on the first day
	Obtaining the responses from each learner in all groups
	Analyzing each learner's needs indicated in needs analysis (NA)
	Identifying learner's interests and their hobbies
	Deducing learner's preferences based on data provided in NA
	Deciding on common task type from the data given in NA
	Determining learner's learning preferences through observations in the classroom
	Setting the goals using the data obtained in NA and the textbook
	Evaluating the textbook vocabulary tasks
	Choosing the vocabulary task to be replaced
	Deciding on the target language items using the vocabulary task given in the textbook, which will be replaced
	Selecting the incidental language from the same vocabulary task, from the sentences given in this task
	Adjusting content to the obtained data in NA
	Modifying the topic according to the learner's learning preferences and hobbies
	Reviewing all materials principles before designing the tasks
	Using materials principles while designing the task
	Addressing learner's individual needs and topic of interest in the task
	Designing the task using obtained data in observations and NA
Adjusting the context to individual interests and needs	
Contextualizing the target language in the content	
Providing a gap-fill task with the same time limit given in the textbook task	
Implementing the target language in the box to have the same emphasis as in the textbook	
Using the chosen incidental language items from the sentences in the vocabulary task in the textbook	
Contextualizing the incidental language in the content	
Scattering the incidental language in narrative of the designed task	
Evaluating the designed task	
Assessing the content in the designed task	
Proofreading the content of the task	
Checking whether the task coincides with the learning preferences and interests	
Verifying the TL in the designed task, its function (on syntagmatic and paradigmatic levels) and textbook target language, its function coincidence	
Ensuring the incidental language function coincidence, on syntagmatic and paradigmatic levels, in both textbook and the designed task	
Using the authentic spoken text given in the textbook	
Exploiting the listening tasks given in the textbook	
Setting the contextualized task (indicated above) after doing the listening stages	
Using clear instructions with the same time limit given in the textbook task	
Providing the needs-based task adjusted to each learner's needs and interests	
Monitoring the learners and facilitating if needed	
Answering their questions (if any) but without additional input	
Observing and tracking incorrect answers to correct later if peer assessment does not work	
Setting the peer assessment	
Monitoring the learners' pair check	
Obtaining the answers in content feedback	
Receiving feedback on content (if any)	

Developed by the researcher

**Table 2.** The paired samples test result in the experiment

Paired Samples Statistics					
	Mean	N	Std. Deviation		Std. Error Mean
Pair 1 VAR00001	17.0730	20		2.47297	.55297
VAR00002	1.5000	20		.51299	.11471
Paired Samples Correlations					
	N	Correlation			Sig.
Pair 1 VAR00001 VAR00002	20	.721			.000

**Paired Samples Test**

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
Pair 1 VAR00001 VAR00002	1.55730 E1	2.13265	.47688	14.57489	16.57111	32.656	19	.000

The results revealed that there was a considerable impact. As a consequence, the experimental groups' mean result was much higher than the control groups' result. The activities of the experimental groups aided learners in acquiring and retrieving vocabulary items more than text-book-assisted multiple-choice tasks. The experiment was a success since the difference is significant both visually and statistically; it is statistically significant. The hypothesis was proved while the null hypothesis was rejected.

**Conclusions.** In conclusion, it can be claimed that lexis

items are more efficiently memorized when learners are given contextualized tasks that are tailored to their needs following the steps indicated in the NDEI model. The results in control groups (M=17.07, SD=2.47) and experimental groups (M=1.50, SD=0.512); t=32.656, df=19, significance p=0.000<0.05 lead us to the conclusion that the hypothesis is proved as the NDEI model usage and adjusting the tasks to learner's individual needs impact the vocabulary skills enhancement.

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