Design and Development of an FLE Placement Test for Science Students: Use of the Moodle Platform

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Abstract:
Teaching foreign languages (FL) is essential for science students as it impacts their academic and professional success. Designing FL programs tailored to students' needs requires placement tests to assess their language skills accurately and guide them towards suitable programs. The integration of Information and Communication Technologies (ICT), especially through online platforms like Moodle, provides opportunities to create personalized placement tests. This approach is grounded in strong theoretical foundations, such as the action-oriented perspective and the concept of evaluation. It involves the design of the placement test, its characteristics, and the utilization of results in the development of a hybrid FL training program for science students.

Keywords: FLE (French as a Foreign Language), Placement Test, Hybrid Teaching Approach, ICT (Information and Communication Technologies).

1. Introduction
The teaching and learning of foreign languages (FLE) occupies a prominent place in the global academic context, particularly for science students whose specific linguistic needs are crucial to their academic and professional success. In this context, the design and development of FLE training programs adapted to students' needs is of paramount importance. In order to properly design these training programs, it is necessary to design and develop placement tests that can accurately assess learners' language skills and guide them towards appropriate teaching programs.

The integration of information and communication technologies (ICT) in language teaching, notably through e-learning platforms such as Moodle, offers unique opportunities to design personalized placement tests tailored to the needs of science students. To shed light on our approach to designing and developing such a test on Moodle, we draw on a solid theoretical foundation that embraces several key areas, including the action-oriented perspective and the notion of assessment. We then explore the principles behind the design of the placement test and its characteristics and discuss the results and their future exploitation in our research, namely the design of a hybrid FLE training device for science students.

2. Theoretical anchoring
1- Research context
The present work is part of a research thesis whose main objective is to design a hybrid FLE (French as a
Foreign Language) training device for a public of scientific students, and more specifically students at the National School of Applied Sciences Tetouan. Indeed, in order to achieve such a design, it turned out that carrying out a placement test was a key step in our scientific approach based on the ADDIE (Analysis, Design, Development, Implementation and Evaluation) training engineering model. The main objective of this type of test was to diagnose the level of students' language skills, in order to guide them appropriately towards class groups at their level. With this in mind, we based ourselves firstly on the action-oriented perspective, then on the principles of evaluation and their evolution following the integration of ICT (Information and Communication Technologies).

2.1. Evaluation principles
Evaluation, although often perceived as an everyday practice, is in reality a complex notion that goes beyond the simple notion of judgment, measurement or categorization. It encompasses a variety of practices and fields of application, making it difficult to define precisely. In the field of language teaching, evaluation has become a multimodal approach, beneficial to both teacher-evaluators and learners, as it contributes to the improvement of training content (Lambert et Candelier 2008, Peltier 2013). It now plays an essential and omnipresent role in improving teaching methods. Since the introduction of the Common European Framework of Reference for Languages (CEFRL) and the action-oriented perspective in 2001, many language training organizations have been striving to align their practices with this reference framework, which has become a European standard. At the same time, the advent of digital technologies, particularly in the training sector, is redefining traditional methods and changing the roles of the players involved, as well as their expectations and aspirations.

Evaluation also covers various types, from diagnostic assessment to certification. In the context of training design, diagnostic assessment is of great importance in determining the skills to be reinforced. This is why we have included a diagnostic assessment in our research work, in order to use the results for design purposes.

In an approach based on the action-oriented perspective in French as a Foreign Language (FLE), assessment focuses on learners’ communicative competence in real-life situations. It favors task-centeredness, where assessments are designed to measure learners’ ability to use language to accomplish specific tasks, rather than focusing on abstract linguistic knowledge. This approach requires assessments to be contextualized to reflect authentic situations, thus encouraging more relevant assessment focused on learners' actual communication. This is why we decided to use contextualized materials in line with the skills to be tested according to the CEFR, i.e. reading comprehension (CE), listening comprehension (CO), writing production (PE) and speaking production (PO).

2.2. Principles of evaluation from an action-oriented perspective
To get a clear idea of this type of placement test, we decided to deal with the subject of language proficiency assessment before going on to explain the design of the test. Assessing language skills involves distinguishing between two essential notions: competence and performance. Skills are knowledge and abilities that enable action, while performances are the concrete manifestations of these skills in specific situations. Skills include declarative knowledge (concepts), procedural knowledge (potential actions) and conditional knowledge (appropriate use). To be competent, it is not enough to possess knowledge or know-how; you must also be able to mobilize it in a relevant way in a variety of contexts.
Competence is linked to action and autonomy, which means that learners must be able to select, combine and use their knowledge and skills appropriately to solve problems or accomplish complex tasks. Competence can be individual or collective, involving interaction with others. It can also be transferred to other situations.

The CEFRL distinguishes between two types of competence: language communication competence and general competence. Language communication competence encompasses linguistic competence (lexical, phonetic and syntactic knowledge), sociolinguistic competence (adaptation to the social norms of the language) and pragmatic competence (functional use of the language and patterns of social interaction). Performance is the observable manifestation of competence in specific contexts. Competence is often assessed through performance evaluation, as it is difficult to measure competence directly. Performance can vary according to context and personal factors such as motivation. It is therefore the result of the interaction between competence, motivation and context.

The competency-based approach places the learner at the center of the learning and assessment process, in contrast to the traditional teacher-centered, knowledge-based approach. Competency-based assessment aims to verify the learner’s ability to mobilize and use knowledge appropriately. This means that assessment is not limited to the correctness of the language, but also encompasses the relevance of the message and communication. The following table compares the two assessments according to different characteristics.

Table 1: Comparison of traditional and competency-based assessment (after Huver et al., 2011:58 and Bourguignon, 2010, p. 62)

<table>
<thead>
<tr>
<th>Features</th>
<th>Traditional assessment: knowledge test</th>
<th>Skills assessment</th>
</tr>
</thead>
<tbody>
<tr>
<td>QCM versus Performance</td>
<td>Students answer short- answer or multiple-choice questions.</td>
<td>The learner-actor constructs an elaborate response in a performance situation related to a complex task.</td>
</tr>
<tr>
<td>School versus Authentic</td>
<td>The questions are academic and often artificial.</td>
<td>Problems are realistic and linked to everyday life</td>
</tr>
<tr>
<td>Frozen versus Interactive</td>
<td>Objectivity dictates a fixed, uniform format.</td>
<td>Interaction is encouraged during problem solving.</td>
</tr>
<tr>
<td>One-dimensional versus Multidimensional</td>
<td>Unidimensional: one item at a time.</td>
<td>We assess the multidimensionality of the skill.</td>
</tr>
<tr>
<td>Individual / Group</td>
<td>The individual is evaluated, positioned and certified in a spirit of classification.</td>
<td>Assessment is both individual and collective, taking into account general, social and cross-disciplinary skills.</td>
</tr>
<tr>
<td>Measurement versus judgment</td>
<td>Objective, quantitative measurement is preferred</td>
<td>The emphasis is on qualitative judgment.</td>
</tr>
<tr>
<td>Ratings versus Criteria</td>
<td>Points are added or subtracted to produce a score</td>
<td>Evaluation based on criteria and performance indicators.</td>
</tr>
</tbody>
</table>
The question of how to evaluate leads us to reflect, on the one hand, on evaluation situations in terms of the choice of activities that enable us to assess this mobilization and use of knowledge, and, on the other, on the approach we are going to follow.

Assessment situations vary according to the type of response expected, from MCQs and matching (closed) tests to more open-ended activities such as essays or commentaries. These assessment situations should reflect the characteristics of skills assessment, such as realistic problem-solving, contextualization, interaction and mobilization of skills. The assessment of skills must take into account several dimensions, including pragmatics, which concerns the match between the language used and the context of communication.

Assessment situations are considered complex, involving well-defined tasks that bring into play several competencies, such as linguistic, strategic and cognitive skills. Evaluation criteria are important for measuring performance, using performance indicators associated with the criteria. These criteria must be relevant, independent, few in number and weighted.

The Common European Framework of Reference for Languages (CEFRL) provides proficiency levels ranging from A1 to C2, as well as analytical scales for different language activities and components of communicative competence. However, some skills are not covered by these scales, which may require the use of criteria and indicators to assess performance in greater detail. Criteria and indicators should be formulated in such a way as to be objective, explicit and consistent to ensure reliable assessment.

### 2.3. Changes in evaluation practices following the integration of ICTs

The integration of Information and Communication Technologies (ICT) in education has brought about significant changes in pedagogical practices, including in the field of assessment. ICT has opened up new perspectives for the way teachers assess the skills of students and learners, while offering powerful tools for collecting data and providing more effective feedback. The integration of ICT has influenced educational assessment in a number of ways:

**Individualized assessment:** ICT enables teachers to tailor assessments more closely to the needs and level of each learner. E-learning tools and adaptive assessment software can generate specific questions or tasks for each student based on his or her skill level, encouraging more precise and targeted assessment.

**Enhanced formative assessment:** ICT facilitates real-time data collection, enabling more effective formative assessment. Teachers can use digital dashboards to monitor student progress and intervene quickly if difficulties arise. Learners can also receive instant feedback via online platforms, encouraging continuous learning.
**Broader types of assessment:** ICT offers a wider range of assessment possibilities, beyond traditional written exams. Learners can be assessed through multimedia projects, online presentations, group discussions, digital portfolios and more. These assessment formats better reflect 21st century skills such as critical thinking, creativity and collaboration.

**Accessibility and inclusion:** ICT has the potential to improve accessibility and inclusion in assessment. Students with special needs can benefit from accessibility features built into digital tools, such as text-to-speech, Braille reading, or font and color customization. This makes it possible to adapt assessments to meet individual needs.

**Reduced administrative workload:** ICT simplifies the marking and management of assessments. Teachers can automate certain marking tasks, giving them more time to provide quality feedback to students. In addition, e-learning management systems enable assessment results and data to be stored and organized more efficiently.

In conclusion, the integration of ICT has considerably broadened the scope of assessment in education. It encourages more personalized, formative and diversified assessment, while simplifying assessment management for teachers. However, it is essential to ensure that the technological tools used respect ethical and confidentiality standards, while taking into account the specific needs of learners to guarantee fair and inclusive assessment. With this in mind, we have designed our online placement test on the Moodle platform.

### 3. Design and development of the placement test

#### 3.1. Background to the placement test.

The placement test model we propose focuses on teaching and learning in a university context. Before taking the decision to implement an online placement test, in any discipline and for any university teaching context, the question of why assess must always precede the question of how to assess?

In our research case, the initial situation was as follows:

- Access for many students to the National School of Applied Sciences Tetouan preparatory cycle.
- Paper-based placement tests were organized in the first week of the university semester, with the aim of placing students in the most appropriate class.
- The advent of COVID 19, which has made paper-based examinations impossible, especially with the decision to move to distance learning.

One of the first objectives in setting up these online placement tests was to unify the placement test and adapt it to the principles of teaching and learning French as a foreign language (FLE). The skills assessed are based on communicative tasks designed to evaluate learners’ skills in listening comprehension, reading comprehension and language structure, according to the descriptors of the Council of Europe’s Common European Framework of Reference for Languages (CEFR, 2001).

A second objective was to reduce the time needed to assess students’ level. Indeed, with the online placement test, feedback can be almost immediate, with an automatic assessment that can be implemented for listening comprehension, reading comprehension and language structures.

A first version of the online placement test was offered to students at the start of the 2020-2021 academic year. It is this phase that we present here, including the prototype of our online placement tests and the analyses we were able to extract from it.
3.2. Placement test design

3.2.1. Measurement by means of a pre-test (a placement test)

Many researchers recommend the use of a pre-test before training and a post-test afterwards to assess the impact of training and measure learner progress (Davidson, 2012, Hughes et Hewings, 2013 et Tasdale, 2019). This quantitative approach involves collecting scores before and after training, followed by statistical analyses to determine the significance of changes. Individual gains are calculated by comparing pre- and post-training scores, then comparisons between learners are made by statistical analysis. This type of study is based on numerical data that can be processed mathematically. Before describing how these tests work, it's important to clarify assessment-related terms, as they may evolve and require terminology updates. Next, we'll use the term "placement test" as the equivalent of "test de positionnement" in English.

3.2.2. The placement test: a proposed definition

In the 19th century, the term "test" was introduced into French, defined as a standardized situation for assessing behavior by comparison with other individuals. To qualify as a test, it must be standardized, reliable, valid and calibrated. Learning and assessment pathscan be divided into three phases: intake and placement (M1), learning with intermediate assessments (M2), and final assessment (M3). Summative assessment is used to verify skills at the end of learning, while formative assessment aims to improve learning by identifying the learner's strengths and weaknesses. Diagnostic assessment is used to take stock of knowledge, indicate likely directions and divide learners into groups. An online placement test we use is part of this evaluative approach, assessing learners' skill levels and directing them to appropriate courses at the start of their learning journey.

3.3. Placement test features

There are several assessment methods, including written tests, oral interviews and online tests, which exploit digital technology to assess learners' skills. The choice of online testis often dictated by the number of learners, particularly in university environments. Our approach is to assess students' language skills in three areas: listening comprehension, reading comprehension, and lexis/linguistic structures, with several levels of proficiency. We examined three online test models, and chose the second model, which functions as a power test, allowing students to earn points according to their performance. This model is automated using the Moodle platform. The first model was complicated to design, while the third model involved student self-assessment, which could be confusing.

4. Development and integration of the placement test

Our aim is to assess learners' performance based on the CEFRL reference levels, on a scale ranging from A1 to C1/C2. With this in mind, we have decided to design a pre-test based on the correspondence of a score to a precise level, which will enable the learner to be placed in a suitable training group. In the following, we will highlight the placement test used on the Moodle platform.

The following table sets out the general concept, specifying the skills to be assessed, the type of exercises and the placement procedures.
4.1. Reading and listening comprehension

To design the placement test for oral and written comprehension skills, we drew on a number of references to create the test activities. We drew inspiration from the FLE methods Cosmopolite and EDITO C1, as well as from the CEFR and its inventory of levels.

Table 3: Placement test design: Oral/written comprehension

<table>
<thead>
<tr>
<th>Level</th>
<th>Text typology</th>
<th>Number of texts</th>
<th>Exercise typology</th>
<th>Number of items</th>
<th>Number of points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>Postcards/short informative texts/business cards/emails/simple advertisements/posters.</td>
<td>Between 1 and 3</td>
<td>MCQs/True or false from written documents</td>
<td>1</td>
<td>4 points</td>
</tr>
<tr>
<td>A2</td>
<td>Signs and billboards/advertising posters/brochures/tourist guides/timetables/menus/recipes/instructions for use/simple regulations/faire-part/short informative articles/short, simple personal letters/standard administrative letters</td>
<td>Between 1 and 3</td>
<td>MCQs / True or false from audio documents, audio tracks</td>
<td>4</td>
<td>8 points</td>
</tr>
<tr>
<td>B1</td>
<td>Advertisements/brochures/posters/newspaper articles/argumentative texts/job instructions/professional texts = letters and circulars/CVs and cover letters/official short documents/personal letters/administrative letters</td>
<td>Between 1 and 2</td>
<td>Fill-in-the-blank text/phrases, MCQs, True or false</td>
<td>6</td>
<td>12 points</td>
</tr>
<tr>
<td>B2</td>
<td>Press articles/formal letters/long, complex instructions/contemporary literary prose texts</td>
<td>Between 1 and 2</td>
<td>Choose from : - MCQs: only 1 expected answer = 3 propositions</td>
<td>4</td>
<td>12 points</td>
</tr>
</tbody>
</table>
4.2. Grammar and vocabulary

For the design of the placement test for the linguistic aspect of proficiency, i.e. grammar and vocabulary, we drew on a set of references to design the test activities. We drew inspiration from the FLE methods Cosmopolite and EDITO C1, and from the CEFR L and its inventory of levels.

Table 4: Placement test design: Grammar and vocabulary

<table>
<thead>
<tr>
<th>Level</th>
<th>Exercise typology</th>
<th>Grammar</th>
<th>Number and content of items</th>
<th>Number of points</th>
<th>Vocabulary</th>
<th>Number and content of items</th>
<th>Number of points</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>3-choice fill-in-the-blank text/phrases</td>
<td>2 ITEMS : ITEM 1 : prepositions (to/at/in) ITEM 2 : Choosing between the present, imperfect and compound past tenses</td>
<td>4.5 points</td>
<td>3 ITEMS : ITEM 1 : scope assessment : activities ITEM 2 : Assessment of spelling skills (punctuation) ITEM 3 : Assessment of spelling skills (numbers)</td>
<td>5.5 points</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A2</td>
<td>3-choice fill-in-the-blank text/phrases</td>
<td>2 ITEMS : ITEM 1 : The conditional ITEM 2: demonstrative pronouns (he, she, they)</td>
<td>6 points</td>
<td>2 ITEMS : ITEM 1 : Scope assessment: professional/academic background ITEM 2 : Assessing spelling skills: everyday objects</td>
<td>4 points</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5. Issues analyzed and methodological aspects

By deploying an online placement test, our intention was to reduce the time required to establish the learner's proficiency level. In addition, we wanted to base our test on an established model, such as a CEFRL-compliant proficiency test, for example.

According to our definition, a test must be standardized, accurate, valid and calibrated (De Landsheere, 1979). These are the characteristics we need to verify in order to validate our test results and class groups. Tagliante (2005) concisely clarifies this concept. Calibration enables a test to place an individual in relation to others with varying levels of sensitivity, meaning that it is capable of distinguishing small differences. Fidelity is associated with the consistency of distinctions identified by a test. The validity of a test guarantees that it correctly assesses what it is supposed to assess. Standardization concerns the conditions under which the test is administered, and these must be uniform for all users. This involves examining whether the conditions under which the test is used are suitable, or whether improvements are needed.

What preoccupied us when designing this placement test was the acceptability of our test with its characteristics: being automated, online, based on a power model and as short as possible, to validate levels in order to design our training device.

As far as practical application is concerned, various aspects of the student's journey through the test were examined. How long does it take to complete a 75-item test (25 items for each skill) with 5 sub-tests for each skill, bearing in mind that each sub-test represents a CEFRL level? Given the overall level of Moroccan students, we decided to limit our test to level C1. What threshold levels should be set in the sub-tests to ensure a coherent progression for each student? What approaches could be considered to reduce the overall test duration?

The prototype of this placement test was tested with a group of first-year preparatory students at the National School of Applied Sciences Tetouan at the start of the 2020-2021 academic year. In this group, 334 students were registered on the platform to take the placement test. Of these students, 242 followed the overall test path and were able to obtain a result after taking all the sub-tests for each of the 3 skills (CO, CE and LS), 17 dropped out while taking the test and 75 students were absent for the duration of the test.

C- Results and discussion

All quantitative data is captured automatically by the Moodle platform as students use the test. To evaluate the test conditions, we mainly examine elementary data such as test duration and scores obtained. We then calculate means and standard deviations. This analysis is based on the application of descriptive statistical methods (Albarello, Bourgeois, & Guyot, 2007). To analyze user acceptability of the placement test conditions, we only processed data from students who had completed the entire test (of the 334 students

<table>
<thead>
<tr>
<th>ITEM</th>
<th>Subjunctive</th>
<th>Unrealized assumptions</th>
<th>4 points</th>
<th>ITEM</th>
<th>Spelling assessment: media</th>
<th>2 ITEMS:</th>
<th>scope assessment: relational</th>
<th>6 points</th>
</tr>
</thead>
</table>

enrolled, we only processed data from the 242 students who had completed the entire test).
As far as the calibration of our test is concerned, a first result shows that the average level of students, automatically calculated by the system on the basis of responses to past items, is validated. In fact, our test manages to situate individuals in relation to each other, since it groups them by homogeneous language levels. We can therefore consider that the levels calculated automatically are adequate.
As far as online administration is concerned, we launched the test during a rather delicate period for the majority of students (2020-2021: distance learning period for the National School of Applied Sciences students). The population of students arriving at the school in 2020-2021 was made up of new baccalaureate students who had only had their first contact with the new online learning methods, and were therefore more or less familiar with the various platform interfaces. In this sense, carrying out an online test on the Moodle platform was not complicated for this population.
Passing time: We decided not to limit the students' passing time, so as not to stress them during the test. Of the 242 students, we had a duration that varied from 24 minutes 21 seconds to 40 minutes 33 seconds, with an average of 39 minutes 6 seconds. Generally speaking, it seems to us that the duration of the test is more or less appropriate. It would nevertheless be advisable to shorten the test time for a new version of the placement test.
For student results: Through the results provided by Moodle, we were able to obtain a precise level for each CEFRL level. To obtain this precision, we calibrated the test to obtain a minimum score.

Table 5: Overall results of the placement test for 2020-2021 in the National School of Applied Sciences

<table>
<thead>
<tr>
<th>Level</th>
<th>Score</th>
<th>Number of students</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>A1</td>
<td>1</td>
<td>10,99</td>
<td>19</td>
</tr>
<tr>
<td>A2</td>
<td>11</td>
<td>20,99</td>
<td>58</td>
</tr>
<tr>
<td>B1</td>
<td>21</td>
<td>30,99</td>
<td>55</td>
</tr>
<tr>
<td>B2</td>
<td>31</td>
<td>40,99</td>
<td>84</td>
</tr>
<tr>
<td>C1</td>
<td>41</td>
<td>50</td>
<td>26</td>
</tr>
<tr>
<td>ABONDANT</td>
<td>0</td>
<td>17</td>
<td>92</td>
</tr>
<tr>
<td>Absent</td>
<td></td>
<td>75</td>
<td></td>
</tr>
</tbody>
</table>

As this graph shows, the largest number of students are positioned at CEFR B2 level. The second-largest number are at A2 level. The results thus obtained enable us to limit the design of our reference systems to levels A1, A2, B1, B2 and C1.
Conclusion

Through this work, we have seen that the placement test is of fundamental importance in the design of a hybrid French as a Foreign Language (FLE) training system. It enables a precise assessment of each learner's level of linguistic competence, providing a solid basis for adapting the content and complexity of the training. By integrating this type of test into the design process, we can create targeted, personalized learning experiences, ensuring a better match between each learner's needs and the pedagogical objectives. In a hybrid system, which combines elements of online and face-to-face learning, the placement test optimizes the use of valuable face-to-face time by specifically targeting areas where learners need the most support and guidance. This promotes more efficient progress and judicious use of available resources. In conclusion, the integration of a placement test into the design of a hybrid FLE training device enhances the relevance and effectiveness of learning by adapting content to individual needs. The choice of intermediate level (B1) for the beta test provides an opportunity to evaluate the impact and success of the system in diversified and stimulating learning situations.

Bibliography


