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## Validating self-made multimedia resources for English teaching and learning in higher education contexts<sup>1</sup>

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**Resumo:** Este artigo descreve a validação de uma ferramenta de auto-avaliação y de preparação *online* de inglês desenvolvida e implementada na Universitat Politècnica de València / Espanha por pesquisadores do grupo CAMILLE. Esta ferramenta é parte integral do *InGenio FCE Online Course & Tester*, criada para preparar aos alunos para provas oficiais de proficiência em inglês de nível intermediário-alto. A ferramenta passou por um meticuloso processo de avaliação por parte de 66 alunos de Inglês para Fins Específicos. Os resultados foram positivos em termos de satisfação dos usuários e proporcionaram informações em relação às preferências dos usuários e às possíveis melhoras.

**Palavras-chave:** Validação de software. Materiais didáticos *online*. Inglês para Fins Específicos. Provas de Idiomas.

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<sup>1</sup> The research described in this paper stems from the PhD thesis entitled “Desarrollo, implementación y validación de recursos multimedia para la enseñanza y la evaluación del nivel B2 de inglés en contextos de educación superior a través del sistema InGenio”, presented by Ana Sevilla-Pavón and supervised by Ana Gimeno-Sanz.

## Introduction

The investigation preceding the study described in this paper focused on the detailed planning of the design process involved in developing an online practice and self-assessment tool for learners of English as a foreign language (EFL) and English for Specific Purposes (EFL) which is an integral part of the *InGenio FCE Online Course & Tester* (SEVILLA-PAVÓN ET AL., 2014; SEVILLA-PAVÓN, 2012). The online self-assessment tool, which we shall refer to as *InGenio FCE Online Tester*, is a resource designed within the *InGenio* learning management system (LMS) for the preparation of B2 level exams (according to the Common European Framework of Reference for Languages, CEFRL, COUNCIL OF EUROPE, 2002) such as the Cambridge First Certificate in English Examination (FCE) and, more specifically, its computerised version, known as Computer-Based First Certificate in English (CBFCE), which is available since 2010. The course plays an important role in the context of the Universitat Politècnica de València (UPV), Spain, because it is used yearly by many students who are willing to learn English online and/or to receive online preparation for an official B2 level English exam.

Over the past 15 years, UPV has been providing the means and taking the necessary steps in order to implement the Bologna Process, a process initiated by the *Bologna Declaration* (EUROPEAN COMMISSION, 1999) to introduce a system of academic degrees within the European Union that are easily recognisable and comparable, promote the mobility of students, teachers and researchers, ensure high quality teaching and incorporate the European dimension into higher education. Subsequently, the UPV's adaptation to the new requirements set forth in the European Higher Education Area resulted in the implementation of several in-house initiatives and funding schemes, through which the creation of the aforementioned online course was possible.

One of the main outcomes of the measures undertaken by UPV for the implementation of the Bologna Process, which was scheduled for completion in 2010, was the "Documento marco para el diseño de titulaciones de la UPV" (Framework for the design of UPV university degrees), published in 2008. Both this document and the official institutional gazette (BOUPV 12/2008 No. 22) state that

all students aspiring to graduate must demonstrate a B2 level of proficiency (that is, an upper-intermediate level) according to the CEFRL (COUNCIL OF EUROPE, 2002) in a foreign language before completing their degree, and that this will therefore be a prerequisite for graduation. This requirement implies the development of a range of skills and sub-skills relating to language use: understanding the basic ideas of complex texts on both concrete and abstract topics, including technical discussions in their field of specialisation; being able to communicate with a degree of fluency and spontaneity with native speakers in a normal interaction without comprehension difficulties arising from any of the speakers; having the ability to produce clear, detailed texts on a wide variety of topics; and expressing their views about any of these issues, pointing out the pros and cons of various options presented regarding a specific topic of discussion (COUNCIL OF EUROPE, 2002). UPV offers its undergraduate students the opportunity to demonstrate such knowledge and skills by passing the FCE examination, on the grounds that the upper-intermediate level that the FCE certifies is equivalent to the B2 level required. An optimal preparation of the candidates is therefore essential for students to be able to certify a B2 level in order to be awarded their degree.

### **1. *InGenio FCE Online Tester***

The creation of the *InGenio FCE Online Tester* is part of the efforts that UPV's affiliated research and development group known as the CAMILLE Research Group has been conducting in recent years towards meeting the guidelines established by the Bologna Process with regard to foreign languages, constituting one of UPV's major contributions towards facilitating EU policies in terms of promoting foreign languages among its citizens. The courseware thus seeks to help students develop communication skills in English, based on the need for European universities to put a clear and coherent language policy in place that takes into account cultural and linguistic diversity, as established by the European Commission. It also aims at supporting students in acquiring a B2 level in English leading toward successfully passing the FCE examination, which certifies proficiency at the said level.



Figure 1. Illustration of Module 1 of the *InGenio FCE Online Course and Tester*.

Furthermore, the creation of the *InGenio FCE Online Tester* is a good example of how ICT can be used for the benefit of language teaching, using the multiple advantages that constant technological advances offer today. Thus, the preparatory and self-assessment course is the result of combining two factors, i.e. planning and designing resources in line with one of the most current trends in CALL, that is, *integrative CALL*, which focuses on interaction between person and person and between person and computer, seeking greater integration and use of multimedia possibilities for language learning (WARSCHAUER, 1996). This approach to language teaching and learning provides richness and variety, thanks to the endless possibilities of use of different technological tools; a growing understanding of how languages are acquired; a number of environmental factors that lead to various priorities, resources and objectives for different students in different contexts; and the possibility to overcome certain challenges as a result of the attributes or qualities of the target language (LEVY & STOCKWELL, 2006). One of the main achievements of this approach and the way it has been implemented in the *InGenio LMS* is related to the presence of a state-of-the-art intelligent tutoring system (ITS), which could be defined as a computer system that provides immediate and customised instruction or

feedback to learners (PSOTKA&MUTTER, 1988), without intervention from a human teacher (GIMENO & DE SIQUEIRA, 2009).

Module 1 of the *InGenio FCE Online Course and Tester* is comprised of 8 Course units (devoted to theory and practice work) and 8 Tester units (devoted to assessing learner progress and checking performance). Each of those units is organised according to the skills being focussed on, i.e. reading, writing, use of language, listening and speaking. It also includes a section that included past papers of the Cambridge FCE examination allowing learners to estimate whether they are ready to take the language exam. Although the *Course* units include a wealth of

The screenshot displays the 'InGenio FCE Online Course & Tester' interface. On the left is a navigation menu with options like 'Initial Survey', 'Presentation of the FCE C&T', 'TEST YOUR ENGLISH', and 'Tester Unit 1'. The main content area is titled 'Tester unit 1 - Paper 4, Part 1 - Multiple choice - Question 1 - Listening'. It contains a video player showing an interview on a radio. Below the video is a multiple-choice question: '1 You hear part of an interview on the radio. Who is being interviewed?' with three options: 'A a nanotechnology engineer.', 'B a chemist.', and 'C a chemical engineer.'. There are 'Evaluate' and 'Show complete answer' buttons. At the bottom, there is a section 'About the FCE:' with a list of possible questions: 'what the people are talking about.', 'how they feel', 'where they are', and 'who they are talking to.'. A dictionary search bar and a 'Student's guide' link are also visible.

exercise typology and interactive activities, the *Tester* simulates the authentic exam papers and includes timed activities which cannot be reattempted once the data has been transferred to the server.

Figure 2. Sample exercise from the “Listening” section in the *Online Tester*.

The materials also include an embedded online dictionary, an overview of the FCE examination, an overview of the courseware and an achievement test.

## 2. Methodology

### *Participants*

The validation process of the materials mentioned above was carried out conducting an empirical study. This process resulted from the implementation of the *InGenio FCE Online Tester* in a context of real use, with students enrolled in an elective subject called *Computer-Assisted English* which was delivered at UPV during the first semester of the academic year 2011-2012. The participants in this study consisted of 66 students taking various engineering degrees at UPV whose goal was to achieve a B2 level of English and/or successfully pass either the FCE or the CBFCE. The subject was delivered fully online using the *InGenio FCE Online Course & Tester*.

### *Data Collection*

The 66 students who took part in the empirical study were asked to fill in a questionnaire upon completion of the course, which inquired about their satisfaction toward the features of the *FCE Online Tester*, seeking as much detail and insight as possible. Queries referred to its usability, navigation, interface design, perceived usefulness of the contents, tasks, activities, exercises and materials used, appropriateness of time allocated to its completion, an estimate of the amount of hours they had needed to complete the various activities, their level of anxiety with regard to taking an exam similar to the *FCE Online Tester* in format, structure, level, etc.; the units they liked or disliked; the learning styles they found more and less effective; and, lastly, whether they would like more curricular-based contents in the materials in future versions of the courseware. Additionally, the last part of the survey was designed to seek the learners' suggestions for improvement, both in terms of design and content. The questions asked were both closed-ended and open-ended.

### *Measurement of variables*

The variables measured were: technical features of the system, overall assessment of the content, usage of the system, students' self-assessment, level of usefulness of the resources, level of interest of the contents, students' level of confidence and students' level of motivation. Each variable was composed of a

number of different defining items and analysed using the SPSS software for a descriptive analysis.

### 3. Results and discussion

As stated before, 66 UPV students completed the entire course and therefore submitted the questionnaire during the first semester of the academic year 2011-2012, which allowed the researchers to gather information on the students' perceptions toward learning English autonomously using an online course. Moreover, it was a crucial instrument to gather information in terms of learner satisfaction and thus be able to, subsequently, improve the system. The descriptive statistics of the variables studied are displayed in Table 1.

	N	Min	Max	Mean	Deviation
1. TECHNICAL REQUIREMENTS	66	3.43	7.00	5.195	.838
2. CONTENTS	66	2.17	7.00	5.242	.919
3. USEGE OF SYSTEM	66	2.00	7.00	5.072	.990
4. SELF- ASSESSMENT	66	2.00	6.67	5.460	.926
5. USEFULNESS OD RESOURCES	66	2.85	7.00	5.375	.923
6. INTEREST OF CONTENTS	66	1.75	7.00	5.333	1.007
7. CONFIDENCE	66	3.33	7.00	5.212	.949
8. MOTIVATION	66	1.67	7.00	5.081	1.070

Table 1. Results of the questionnaire.

The students' responses to the questionnaire provided valuable information about the various aspects being analysed, which constituted the different variables listed below, each of which included different sub-items. Among these, several aspects were unanimously awarded a positive value, obtaining a grade of at least 5 out of 7 (in a seven-point Likert scale) in all cases:

- 1- **Technical requirements and user-friendliness:** Was the interface user-friendly? Was the navigation intuitive? Would it be easy for someone with minor computer skills to use the *Course & Tester*? Were the graphics and symbols clear to the user? Was the layout (use of colours, fonts, icons)

appealing? Was the language input is meaningful and interesting? Was the audio input clear and loud enough?

- 2- **Interest of the practical-theoretical contents:** Were the following contents useful and relevant? a) the *Polimedia* recordings; b) the specific course contents; c) the specific *Tester* contents. Were the following contents sufficient? a) the theoretical contents; b) the practical contents. Were the different task sand activities original?
- 3- **Students' use of the system:** accessing the theoretical contents before completing the activities; watching the *Polimedia* videos before completing the activities; learning autonomously and independently; asking the tutor for help when needed.
- 4- **Students' self-assessment of their progress:** organising time in their own way; students would recommend the course to a friend; accessing the online progress reports; getting feedback; general improvement of their linguistic skills; overall preparation for a B2-level official exam.
- 5- **Usefulness of the resources:** reading; writing; listening; speaking; grammar; vocabulary; technical resources; grammar sections; self-assessment sections; information about the FCE, exam tips.
- 6- **Interest of the resources:** input; topics; tasks; variety of resources.
- 7- **Students' level of confidence regarding taking an official exam:** reduction of anxiety; better knowledge about the FCE; level of comfort working in an online environment.
- 8- **Students' level of motivation:** online versus face-to-face learning; influence of the medium of instruction; enjoyment of online languages learning.

The first variable, "Technical requirements and user-friendliness", included different sub-items such as interface, navigation, ease of use, clarity of graphics and symbols, layout, linguistic input and audio input. The mean was 5.195 and the most valued aspects concerning this item were language input and ease of navigation.

The contents were also subject to inquiry within the variable "Interest of the practical-theoretical contents". Most of the items received a high value, the mean being 5.04: the *Polimedia* recordings, the specific course contents, the specific

*Tester* contents, whether the different contents were sufficient, and the originality of the activities.

As for the variable “Students’ use of the system”, which comprised accessing the theoretical contents before completing the activities; watching the *Polimedia* videos before completing the activities; learning autonomously and independently; and asking the tutor for help when needed; the mean was 5.072. Furthermore, it is worth mentioning that the amount of hours which students devoted to accessing the contents and completing the different activities was very high. 14% of the students spent from 2 to 4 hours a week working with the *Tester*, 75% devoted from 5 to 8 hours a week and 11% spent more than 8 hours weekly. In addition, most students (74%) were satisfied with the amount of time they devoted to the *Tester* in relation with the time available to complete the whole course. The official duration of the subject, however, was scheduled to last 45 hours during one semester, with a total value of 4.5 ECTS. Had the subject been face-to-face in a classroom, this would mean 3 weekly contact hours. As we can see, students reported having spent nearly twice as much time, which probably accounts for the time that would have been spent in the classroom plus revising at home.

As for the section which inquired about the students’ self-assessment of their progress, the mean was 5.46. Most students reported the following: they enjoyed having freedom to organise their time their own way (5.78); they would recommend the *Course & Tester* to a friend (5.63); they enjoyed being able to self-assess their progress by accessing the progress reports (5.46); they considered the feedback useful and relevant (5.12); and they felt their general linguistic level had improved (5.28).

The mean in the case of the fifth variable, “Usefulness of the resources”, was 5.37. Concerning this variable, the sub-items were the assessment of different resources for reading, writing, listening, speaking, grammar, and vocabulary; as well as technical resources; grammar sections; self-assessment sections; information about the FCE section; and exam tips. All the items but one obtained a grade higher than 5: the speaking-related resources were the least popular among students, as the grade they assigned to this item was slightly under 5 out of 7 (the mean for this

item was 4.71), while all the other items obtained a mark higher than 5, as pointed out earlier. The explanation provided by the students themselves in their responses to the open-ended questions relates to the way the speaking activities were designed, basically due to technical constraints: most speaking activities within the *Tester* were not communicative enough, as in most cases students did not “communicate” with other people or with a computer; instead, they listened to a set of prompts to which they responded by recording themselves with a microphone. Therefore, oral interaction was very limited and artificial, except in those cases where the students recorded themselves working in pairs. This issue could be solved by incorporating the *InGenio Online Tester* in blended-learning (b-learning) contexts instead of using it in an exclusively online context. Thus, communicative oral interaction would be ensured and the oral tasks would take place in face-to-face classes while other tasks, including pronunciation exercises, as well as tasks regarding other skills (reading, writing and listening), would be completed online without hindering the practice and development of speaking skills.

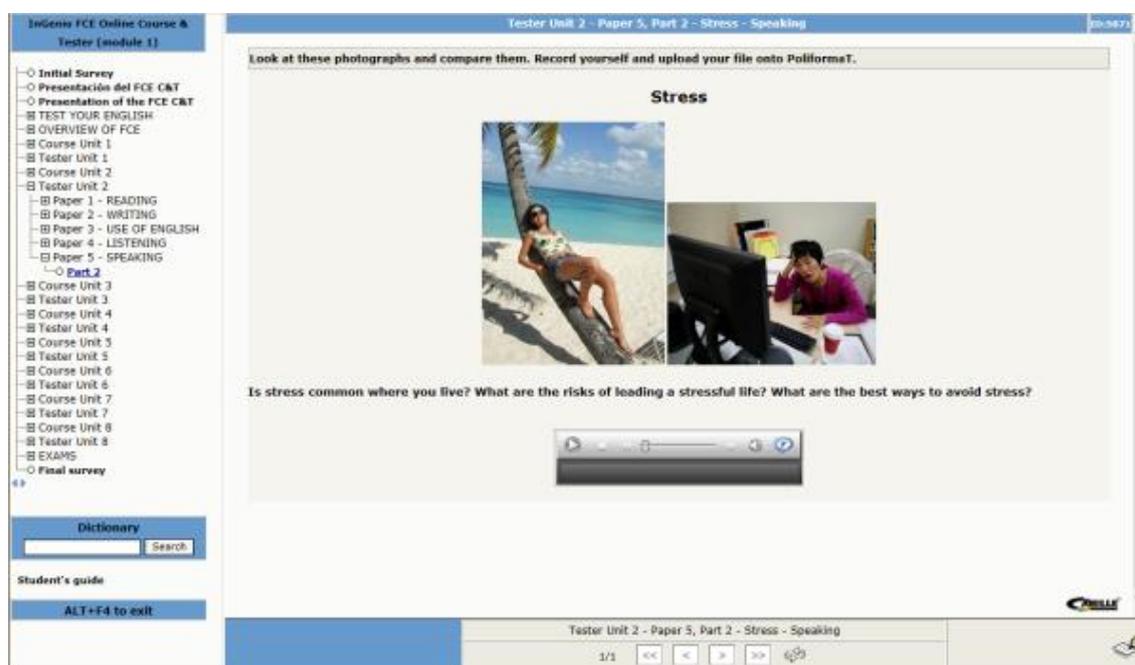


Figure 3. Sample activity taken from the “Speaking” section where the learner has to record and upload an audio file.

As for the level of “Interest of the resources” (variable 6), the average grade awarded to this variable was 5.33, which means that students positively rated aspects such as input (5.22), topics (5.30), tasks (5.28) and variety of resources (5.51). Likewise, they positively rated variable 7, “Students’ level of confidence regarding taking an official exam”, as the mean in this case was 5.21. This variable included the following sub-items: reduction of anxiety (4.8); better knowledge about the FCE (5.65); and level of comfort working in an online environment (5.18). In addition, after using the *InGenio FCE Online Tester* there was an increase in their intention of taking an official B2 level language test resulting from an increase in their level of confidence to pass such an exam.

Moreover, in their answers to the open-ended questions the students provided very useful suggestions for improvement and these are being taken into account in such a way that it is hoped that the subsequent versions of the *InGenio Online Tester* can better cater for the students’ needs while attending to their preferences and interests.

The learners themselves provided us with the following comments which, in our opinion, reflect their keenness to consolidate theoretical knowledge and successfully pass a higher-intermediate proficiency language exam. When asked what they would include more of, some of them replied:

- More theoretical (grammar) contents: 4 instances
- More (timed) FCE exams: 4 instances
- More live speaking with the teacher: 3 instances

This last item also reflects the inadequacy and low degree of motivation that the speaking activities arose among some students, as reported above.

Improvements will thus shortly be implemented in the form of an increase in the amount of theoretical and grammatical content, both in written and audiovisual formats; a reformulation of the instructions that the students found ambiguous or unclear; providing them with more opportunities for communicative oral practice; and increasing the variety of activities and tasks in such a way that more technical and scientific contents are provided to cater for the various degrees they are taking.

## Conclusions

The empirical study described in this paper, which was carried out as part of the validation process of the *InGenio FCE Online Tester*, showed that the materials were rated very positively by their users in terms of effectiveness regarding the development of B2 level linguistic skills and competences as well as non-linguistic skills, including levels of knowledge concerning the FCE and the CBFCE exams. Moreover, the students found the materials complete and motivating. In addition, they felt more confident about taking an official B2 level exam after using the materials.

Future studies should follow in order to complete the validation of the *InGenio FCE Online Tester* as a tool for the acquisition of knowledge and the development of different skills and competences (linguistic, communicative, digital and intercultural) in English as a foreign language, including those among the descriptors of the B2 level of the CEFRL, which states that a person at this level should be able to “understand the main ideas of complex text on both concrete and abstract topics, including technical discussions in his/her field of specialisation (...) Interact with a degree of fluency and spontaneity that makes regular interaction with native speakers quite possible without strain for either party (...) Produce clear, detailed text on a wide range of subjects and explain a viewpoint on a topical issue giving the advantages and disadvantages of various options” (p. 24).

The data collected in the study by means of a questionnaire provided useful information on the students' attitudes towards language learning, their level of self-confidence toward taking an official proficiency exam, their motivation in language learning and their opinions and comments about the features of the *Tester*. The different aspects surveyed in this questionnaire revealed high levels of satisfaction among the students, and a positive evaluation of the different aspects they were asked to assess or comment on. Furthermore, the suggestions provided by the students in their responses to the open-ended questions proved very useful to make improvements and to enrich the contents.

The students reported having developed communicative and linguistic skills in English B2 level, which is the level both certified by the FCE and required by UPV for students to have achieved before finishing their respective degrees. In addition, they

reported feeling more confident about their linguistic abilities and their preparation to take an official B2 level exam, and they were satisfied about their learning experience and about the *Online Tester*, which also helped them become autonomous and aware of their own learning, their needs and achievements.

It can therefore be argued that the results of the empirical study carried out in relation to the *Tester* attest to the success of the initial validation process, which in turn corroborate the strength and validity of the theoretical and pedagogical frameworks established, as well as that of the process of design and development of the contents, along with the methodologies followed when using those materials. This means that a theoretical and pedagogical framework for teaching and assessing a B2 level of English for Specific Purposes online was created successfully. In addition, the materials developed contribute towards enriching the amount of online B2 level EFL & ESP materials which have been both validated and adapted to the technical and scientific context of UPV.

It is hoped that more validation processes will follow in order to assess the effectiveness and efficiency of the materials when used in different contexts and when following diverse learning modalities. In addition, in order to retrieve reliable results which can be generalised, future studies should be carried out with a wider population which might include control groups. Furthermore, the results obtained and the impressions conveyed by the learners, which were mainly analysed qualitatively, should be contrasted with objective results analysed quantitatively, which could be obtained by the students' when using the different materials and/or when taking official exams and other objective means of assessment.

**Abstract:** This paper describes the validation of an English language practice and self-assessment online tool developed and implemented at the Universitat Politècnica de València in Spain by researchers of the CAMILLE group. This tool is an integral part of the *InGenio FCE Online Course & Tester*, designed to support learners intending to take a higher-intermediate proficiency exam. The tool was submitted to a thorough product evaluation process by 66 learners of English for Specific Purposes. The results obtained are positive in terms of user satisfaction and also shed light on user preferences and possible improvements.

**Keywords:** Courseware validation. Online teaching materials. English for Specific Purposes. Language exams

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