

Bringing Technology to English Language Learning: Making It Work

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Interactive Multimedia (IMM) has been accepted as an exemplary application of modern technology that is used to teach and learn foreign languages more effectively, especially in ELT programs. We discuss the development and application of IMM and its principal features in terms of the positive impact that has on improving the learning environment in foreign language education. It has achieved incredible success because it has increased test results among learners and satisfaction among teachers and their students.

Key words: Interactive Multimedia, Cognitive, Affective, Computerized Adaptive, Eclectic, Collaborative Learning

La Multimedia interactiva (IMM) ha sido aceptada como una aplicación ejemplar de la tecnología moderna que se emplea para enseñar y aprender lenguas extranjeras más efectivamente, sobre todo en la enseñanza del inglés. Discutimos el desarrollo y la aplicación de IMM y sus características principales en cuanto al impacto positivo que tienen para mejorar el ambiente de aprender en la educación de lenguas extranjeras. Esta herramienta ha logrado un éxito increíble porque ha mejorado los resultados de los exámenes entre estudiantes y la satisfacción de maestros y sus alumnos.

Palabras clave: Multimedia Interactiva (IMM), Cognición, Afectividad, Adaptado por Computador, Ecléctico, Aprendizaje Colaborativo

Research indicates that interactive multimedia (IMM) technology is a powerful tool offering educators solutions to teaching and learning second/foreign languages more effectively. Please study Chart 1 (Otto, 1991, p. 44), The Applied Technology Pyramid, and the commentary that follows it.

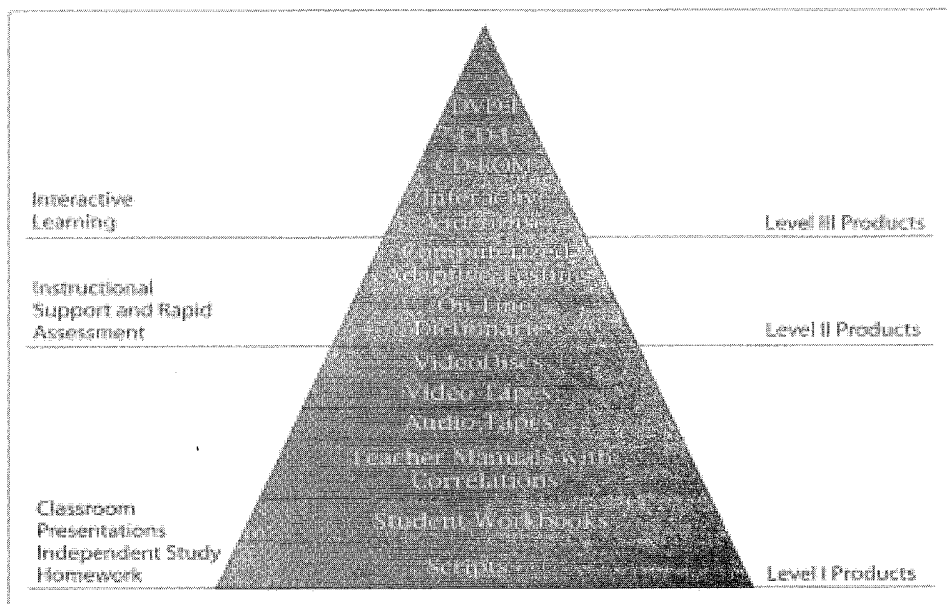


Chart 1. Applied Technology Pyramid

Both compact-disc interactive and digital video-disc interactive applications offer the most complete and promising range of IMM teaching and learning activities available at this time. While the space represented on the pyramid indicates that CD-I and DVD-I are currently the least-used applications of Level III interactive learning, you should know that these two areas account for the most popular, challenging, and aggressive growth in teaching and learning today. They clearly represent the wave of the immediate future in IMM English language teaching (ELT).

Since the exhaustive Pennsylvania Project (Otto, 1969, p. 411) research (1966; replicated in 1968) failed to determine which methodology of teaching languages was superior (traditional grammar-translation vs. audio-lingual habit formation), many new methodologies surfaced in efforts to claim a significant place in teaching second/foreign languages. In total there have been 22: The Silent Way, Counseling

Learning, Communicative Language Teaching, Suggestology, Total Physical Response, etc. Not one was accepted as the panacea including the original two studied in the Pennsylvania Project. Why?

Research into second-language acquisition and the effective use of IMM has taught language teachers and teacher educators the following:

1. Teachers follow a tendency that has become increasingly more prevalent. Following an openly eclectic approach, they choose to rely on tools, techniques, and classroom activities that most closely comply with their teaching styles as well as the preferences of their learners. They simply want to be as comfortable, challenging, and confident as possible in their classrooms; therefore, a wide variety of options should be made available to them, including IMM technology.

2. Researchers recently have opted to focus more upon how learners acquire a second/ foreign language than on how their teachers present instruction. We have chosen to replace the teacher-centered classroom with the learner-centered classroom and, since research results have concluded that there are many diverse learning styles, our immediate challenge is to accommodate as many students as possible.

3. Students prefer to learn with the widest possible variety of media and activities that enable them to interact with native and non-native speakers of the target language in authentic situations. They enjoy realistic topics, events, and situations that allow them to role play and solve simulated problems with their peers.

What else have we learned?

- IMM technology lends itself ideally to achieving these goals by incorporating a curriculum that is notional-functional (Barnett, 1980, p. 43) in its approach to teaching and learning.

- Students enjoy learning with their peers in learning centers as well as in classrooms. Technology allows us to accommodate this preference by employing a splitter so that two or three students may enjoy working together at the same computer.

Since 1956, conclusive research has been done to define levels of thinking in both the cognitive and affective domains as well as behavioral objectives for learners stated in terms of classroom performance. Please study Chart 2, Levels of Thinking, summarizing my adaptation of Bloom's Taxonomies of Educational Objectives and Mager's "P.I. Objectives" (Bloom, 1956, p. 18) (Bloom, Krathwohl, Masia, 1956, p. 45).

Levels of Thinking	Teaching Goals: Learners	Learners' Behavior	Classroom Activities
1. Memory (lowest level of knowledge)	Know factual material.	Recall facts as given, no understanding required.	Rules, vocabulary, pattern drills, repetition drills
2. Comprehension (lowest level of understanding)	Demonstrate understanding of factual material.	1. State given information in one's own words. 2. Given definition for terms used based on former experience.	Simple substitution, drills, pronunciation drills
3. Application (lowest level of understanding related to job performance)	Solve problems using previous knowledge.	Used previously learned materials or skills in new situations.	Skeletal sentence exercises, multiple substitution drills
4. Analysis	Examine facts in order to solve problems.	1. Reasons for the specific to the general (inductive thinking). 2. Reason for the general to the specific (deductive thinking).	Combine sentences. Exercises involving giving directions
5. Synthesis (emphasizes uniqueness and originality)	1. Examine alternative methods of solving problems. 2. Offer students freedom in selection.	Bring together all facts to offer many possible solutions to given problems.	Writing compositions, guided conversations, short speeches on chosen topics
6. Evaluation	Make an assessment of value according to their own standards.	1. Set up appropriate standards. 2. Determine whether ideas or objectives meet the standards established.	

Chart 2. Levels of Thinking. Bloom's Taxonomy of Educational Objectives Adapted to Mager's "P.I. Objectives"

The challenge confronting teachers and students in any skills-based learning environment is to move as rapidly and extensively as possible from Level 1 activities (memory) to higher-level activities (comprehension, application, analysis, synthesis, and evaluation). IMM technology offers the most diversity and depth of activities in these higher levels of thinking.

Now let's look at Chart 3, Levels of Learning, and the comments following it.

- | |
|--|
| <ul style="list-style-type: none"> • Autonomous • Collaborative • Critical thinking • Cross cultural |
|--|

Chart 3. Levels of Learning

Everyone is familiar with autonomous learning since it is the study environment most familiar to the majority of learners involved in acquiring knowledge and skills. IMM technology challenges students to collaborate with one or two learning partners as they help each other master skills together in a mutually supportive manner. This approach to learning leads naturally to more critical thinking and analysis which are activities that result in additional growth in the higher levels of thinking found in Chart 2. In order to maximize cross-cultural learning, it is virtually essential for learners to share comments and observations with their peers throughout their learning activities.

Now study Chart 4, Active Learning: The Learner As Doer (CAP), and the comments following it.

Cognitive	Affective	Physical
• Inductive grammar	• Personalization activities	• TPR activities
• Organizing vocabulary	• Learning logs	• Role plays
• Ranking activities	• Emotional dialogs	• Interactive websites
• Predicting activities	• Surveys and interviews	• Pronunciation activities
• Self-correcting of errors		
• Prioritizing activities		

Chart 4. Active Learning: The Learner as Doer CAP

Educators are now placing increasingly more importance on progress in both the affective and physical domains. Since our goal is not limited to cognitive growth

alone, it is equally important to enable students to internalize and personalize their learning activities as they hone their communication skills.

Chart 5 contains selected overlapping continua that offer challenges as well as solutions to problems confronting language teachers and learners. Please study these continua and the comments that follow.

linguistic competence	↔	communicative competence
prescriptive	↔	descriptive
deductive	↔	inductive
memorization	↔	problem solving
teacher centered	↔	learner centered
memorizing rules	↔	discovering patterns of usage
de-contextualized	↔	contextualized
product-based interaction	↔	process-based interaction
passive-learner participation	↔	active-learner participation
time-on-task	↔	mastery learning (80%?)

Chart 5. Learning Activities Continua (Selected examples)

Because there is such diversity in teaching and learning styles, the challenge is to be inclusive rather than exclusive when working with the continua on the above chart. It's not a question of "either... or...", but a need to blend ingredients from these and other continua that are acceptable to the teachers and learners involved. Preferences change constantly depending on the age and proficiency of the learners, the time available for instruction and practice, the quality and depth of teacher training, and the extent to which IMM technology is supported aggressively and creatively. NOTE: There are no value judgments that certain approaches are inherently superior or better than other options along each continuum. The point is that different comfort zones that accommodate a variety of teaching and learning styles are normal and to be expected. We need the variety of treatment and depth as well as a range of activities that only technology can provide.

With the understanding that the purpose of technology is not to replace teachers but to provide tools that enhance the teaching and learning environment in ways that would not otherwise be possible, selected exemplary features of IMM technology are listed in Chart 6 for your consideration.

- text
- audio
- branching

- voice recording, playback and comparison
- graphics including digitalized pictures and animation
- full-motion video
- simulations involving role play and problem solving
- provisions for learning with one or two partners
- individualized tutorials
- computer-adapted testing
- computer-adapted options for teachers and learners (“Create-a-Path”)
- realistic models of authentic language
- virtually limitless practice
- complete instructor’s guide
- fully-developed and integrated student workbooks
- sophisticated and complete record keeper
- robust management system
- full technical support
- detailed teacher-training program
- extensive skill-based games
- user-friendly package
- learning based on longitudinal empirical-data research
- scope and sequence
- correlations with texts and tests

Chart 6. Selected Exemplary Features of IMM

Since 1992, IMM technology has consistently expanded educational boundaries and teachers’ roles. While we now focus on activities that support the learner-centered rather than the teacher-centered classroom, there is no doubt that many teachers have utilized IMM technology to become more successful managers and facilitators of the learning process. They have gained access to countless options that they use daily to enhance significantly the teaching and learning process.

Let’s look at the rapid emergence of IMM technology, the strides that it has made in a very short period of time, and the reasons for its remarkable success in ELT. We will use what I refer to as the snapshot approach.

First, let’s observe the importance of English in today’s world.

- Almost two billion people on our planet study English.
- English has official status in more than 75 countries.
- 80% of all information on the world’s computers is in English.
- 60% of the articles in scientific journals is in English

We can participate in branching because, in real life, we often change our minds as we react and as communicators to topics, events, and situations. We can record our voice, play it back, compare it with that of a native speaker, and work with activities to reduce our accent. By definition, multimedia is “the sequential or simultaneous use of a variety of media formats”. In IMM, the key words relating to access are *instantaneous* and *accurate*. We can retrieve exactly what we want from a robust database at the touch of a key or mouse. What a feeling of power and control! We can use the system to truly serve our individual needs as well as those of our students.

The success of a quality IMM system depends on a seamless interface among hardware, software, and courseware components that is transparent to teachers and learners. Think of hardware as machines, software as the program that runs the machines, and courseware as the instructional package that allows users to teach and learn with the system. What’s the most indispensable ingredient? We are! That’s why I refer to teachers as *warmware*: the people who make learning with IMM come alive. We are the leaders and drivers of the instructional program. IMM gives us more opportunities to motivate learners and individualize instruction than all other instructional systems combined.

More teaching choices and learning options make the move to IMM easier and infinitely more appealing to all who are involved. Whatever features you choose, make sure that the courseware employs the fullest variety of media, is easy to use, exciting to look at, pedagogically sound, and is based on scientific research. Premium IMM products provide plentiful tutorials, regular simulation activities based on realistic communication, copious practice, games that focus on language-building skills, and adequate quizzes and tests.

As educators, we are expected to familiarize, integrate, teach, manage, and evaluate (FITME) our students among the many other constructive things that we do to motivate them. I suggest that you use IMM technology to enable you to do things that would be impossible/improbable for you to do without it. Years ago, I spent an inordinate amount of time keeping records of progress for my students because I wanted to individualize instruction and challenge learners by giving them activities that were always on their level. With IMM, a robust management system and record keeper, activities that incorporate computerized-adaptive teaching, and computerized-adaptive testing, are a just few of the many features that will allow you to reach these and other goals effortlessly in a timely manner while maintaining complete control of the teaching and learning process.

If you’re planning to implement IMM technology, the basic ingredients of your recipe for success, especially with beginning learners, should include the features

of native-language guides and aids (that may be disabled whenever you choose), realistic modeling, mastery learning (80%?- you set the level), and a variety of practice and problem-solving activities that are culturally authentic. Although good IMM systems are naturally user friendly, they are very robust. Make sure to receive full teacher training and technical support so that you as well as your colleagues and students fully benefit from the system's maximum potential.

Education has no doubt been influenced enormously and positively by technology. Look at Chart 7, Rules and Conclusions, and the comments that follow it.

1. Technology is not designed to replace teachers.
2. Technology provides teachers tools to enhance the learning environment.
3. We are educators who are learners along with our students.
4. Courseware must adjust to different styles of teaching and learning, levels of intelligence, and time required for mastery learning.
5. Our role as teachers has changed. We have become agents of change.
6. We assist in developing self-help learning techniques, activities and facilities.
7. We must focus on outcomes as well as procedures.

Chart 7. Rules and Conclusions

This is obviously a very limited list that will suffice as a basic frame of reference for many exhilarating discussions as your team shapes your IMM technology program to your special needs in ELT. Browse through this article again and choose the features that are most appealing to you and your colleagues. Remember that IMM technology has changed education permanently in many ways. Here are just a few to whet your appetite:

- Educational systems don't limit instruction to brick-and-mortar facilities for 12-16 years. Many schools have more students in distance-learning programs than they have "on campus". For these students, the virtual classroom has become a reality.
- Learners have assumed much more responsibility for learning throughout their lives. Many are happy surfing the Internet, participating in chat rooms, and enjoying a variety of newly-emerging and constantly-expanding devices introduced by technology such as cell-phones, I-pods, palm pilots, etc. Socrates observed that man pursues learning throughout his life.
- Employers have placed much more importance on continuous on-the-job training. This has become increasingly more important because many employees will have 3-4 different jobs during their working years.

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