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THE EMOTIONAL TRIGGERS USED BY YOUTUBERS TO ENHANCE THE LEARNING EXPERIENCE THROUGH EDUCATIONAL VIDEOS



09/19/2024



Pascal FABIANO

Dir. Alain JAILLET

My name is Pascal Fabiano. The title of my speech today is “**The emotional triggers used by YouTubers to enhance the learning experience through educational videos** »

- ▶ Brief presentation of my research topic
- ▶ Some focal points of my theoretical framework
- ▶ An analytical grid for objectifying the rhetoric of pathos and the emotional triggers used by youtubers in educational video clips
- ▶ Research prospects

I would like to introduce you to my research topic, *** present you some focal points of my theoretical framework, ***show you an analytical grid that I have created for objectifying the rhetoric of pathos and the emotional triggers used by youtubers in educational video clips and *** finally tell you about my research prospects

- Have you ever wondered why this kind of video is so successful?
- And why this one is less successful?



high-audience videos

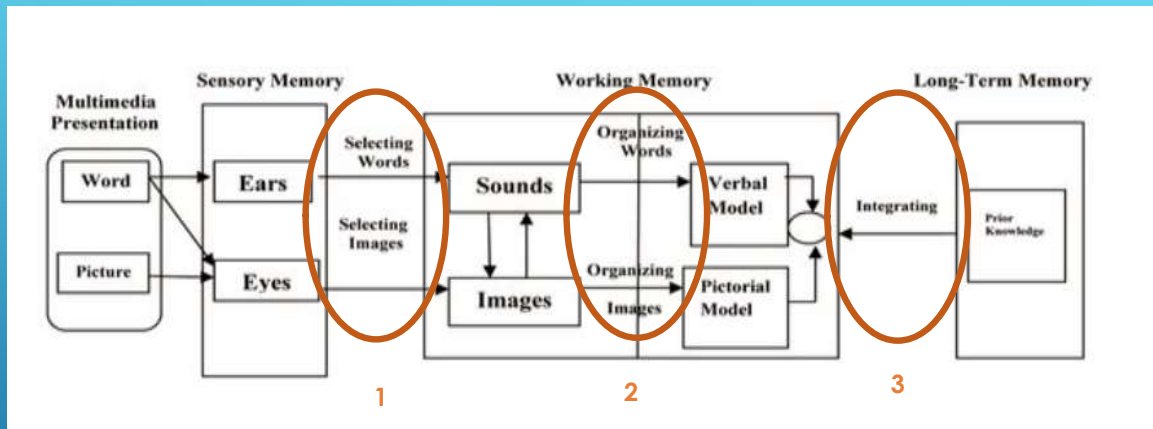


low-audience video

RESEARCH TOPIC

- identify the nature of the processes that take place within a teaching-learning situation that incorporates an educational video and understand the reasons why they work (or don't work) in order to understand the conditions for their effectiveness ;
- with an emotional and socio-cognitivist approach.

- Both are educational videos that could be integrated into a teaching-learning situation
- I ask myself this question and above all I wonder if these videos are effective for learning
- ***My aim is to contribute to identifying the nature of the processes that take place within a teaching-learning situation that incorporates educational videos, and to understanding the reasons why they work (or don't work) in order to understand the conditions for their effectiveness.
- The originality of my approach is that I take an emotional and socio-cognitivist approach, trying to enrich existing theoretical frameworks and concepts.



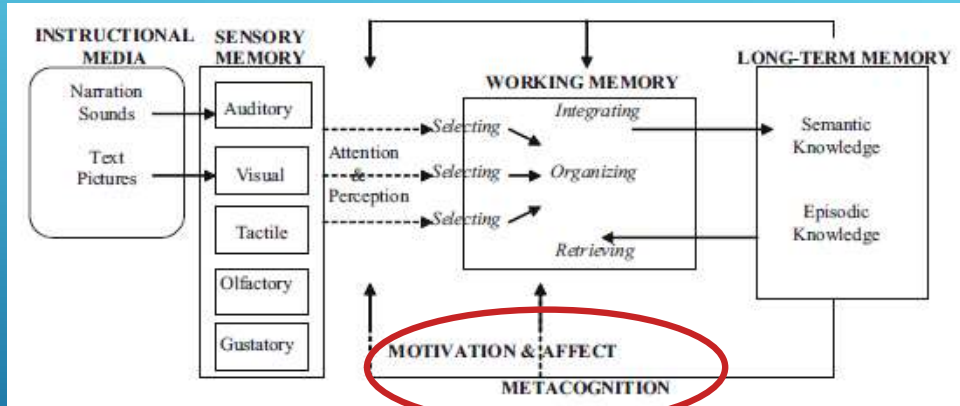
Cognitive theory of multimedia learning (CTML). (Mayer 2005, p. 37)

1 Selecting the important information to be processed in working memory

2 Organising the selected information by creating links between them

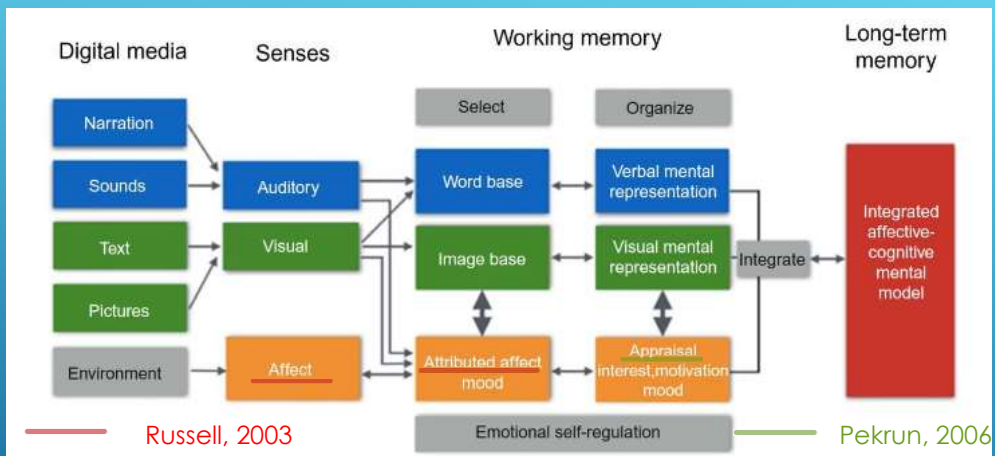
3 Integrate the new information with elements of prior knowledge stored in long-term memory.

- I will now quickly describe my theoretical framework
- We rely on three well-documented models of multimedia learning ***
- the first model we work with is the Cognitive theory of multimedia learning of Mayer, that focuses only on cognitive processes
- The main contribution of this model is to explain the process of knowledge creation in a multimedia environment even if it focuses only on cognitive processes
- However, some models have been introduced that extend CTML by including affective and motivational factors.



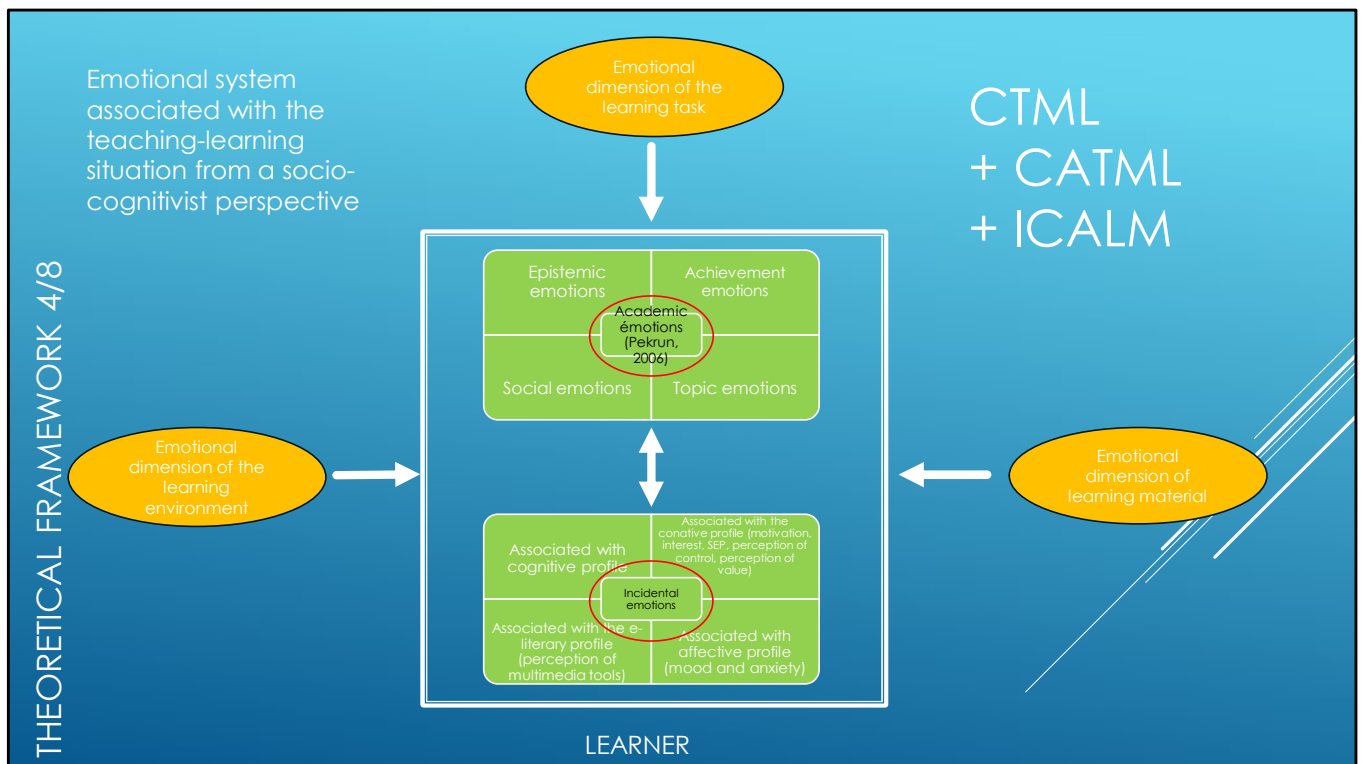
Moreno, R., Mayer, R. Interactive Multimodal Learning Environments. *Educ Psychol Rev* **19**, 309–326 (2007). p. 314

- The Cognitive-Affective Theory of Learning with Media (CATLM) from Moreno adds to Mayer's model affect, motivation and self-regulation as 'mediating' elements in the selection, organization and integration of information



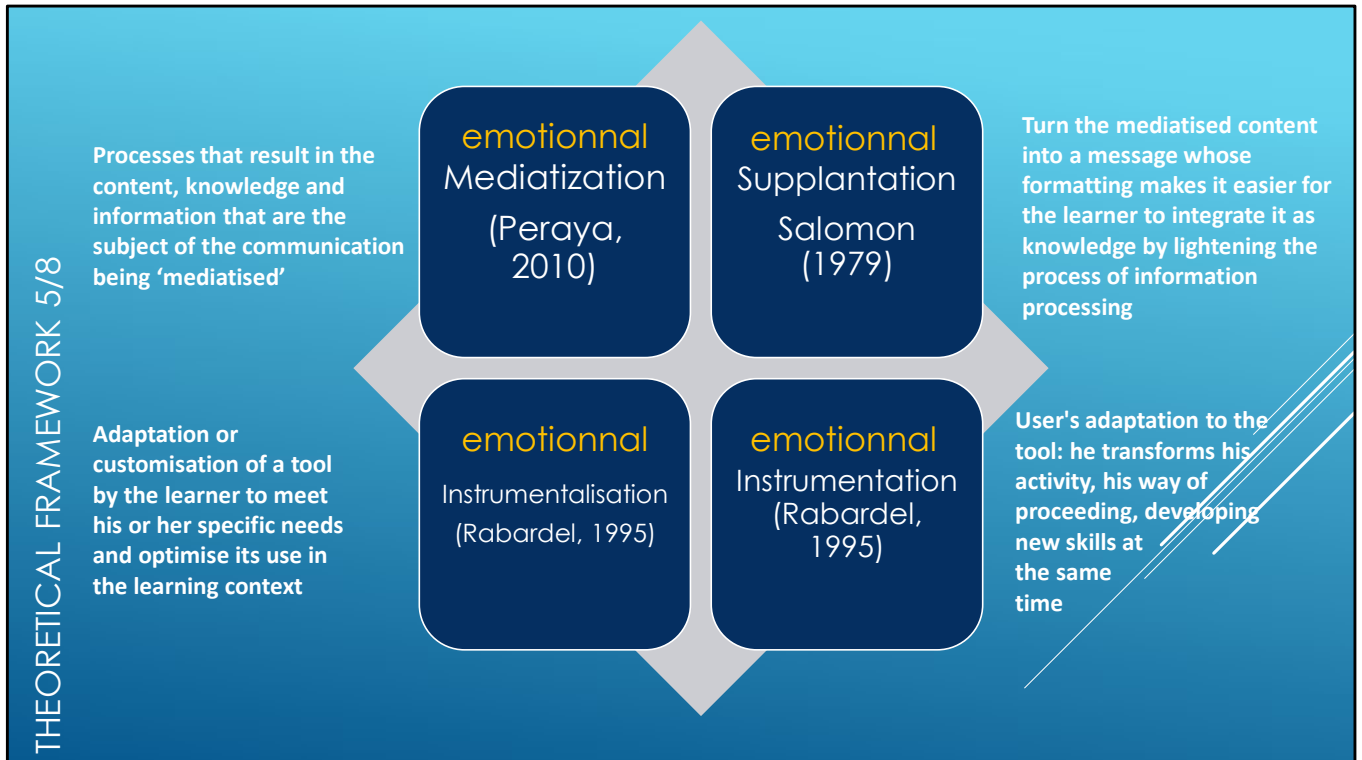
Integrated Cognitive Affective Model of Learning with Multimedia (ICALM), taken from Plass, J. L. & Kaplan, U. (2016). Emotional design in digital media for learning. In S. Tettegah, & M. Gartmeier (Eds.), Emotions, technology, design, and learning (p. 150). New York, NY: Elsevier

- The Integrated Cognitive Affective Model of Learning with Multimedia (ICALM) from Plass & Kaplan incorporates elements from Russell's (2003) dimensional theory of emotions and elements from Pekrun's (2006) Control-Value Theory of Achievement Emotions into Mayer's (2001) model.

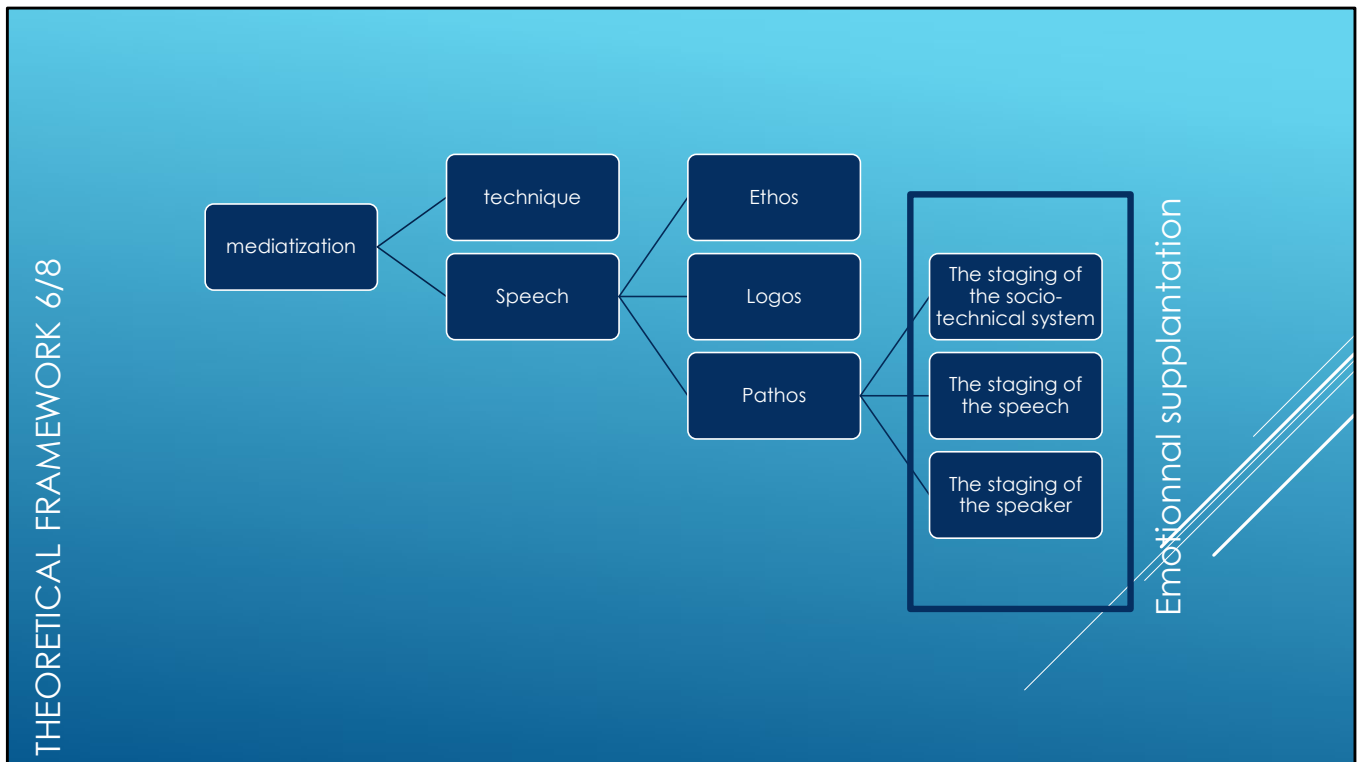


- Our approach is based on the three models we have just mentioned, and other aspects of emotions, such as *** Pekrun's academic emotions, *** incidental emotions linked to the conative, cognitive and affective profile of the learner, but also *** emotions triggered by the learning task; *** emotions linked to the learning material (and in particular the attitude towards it), and emotions linked to the learning environment (the fact that the family and school environment are acculturated to digital technology in particular)
- We consider that in an autonomous teaching-learning situation when faced with a multimedia tool, the learner is driven by a dynamic and interactive emotional system, fueled by stimuli from the environment (such as attitude towards multimedia tools), the learning material, but

also specificities linked to the learning task, such as the anxiety it provokes.

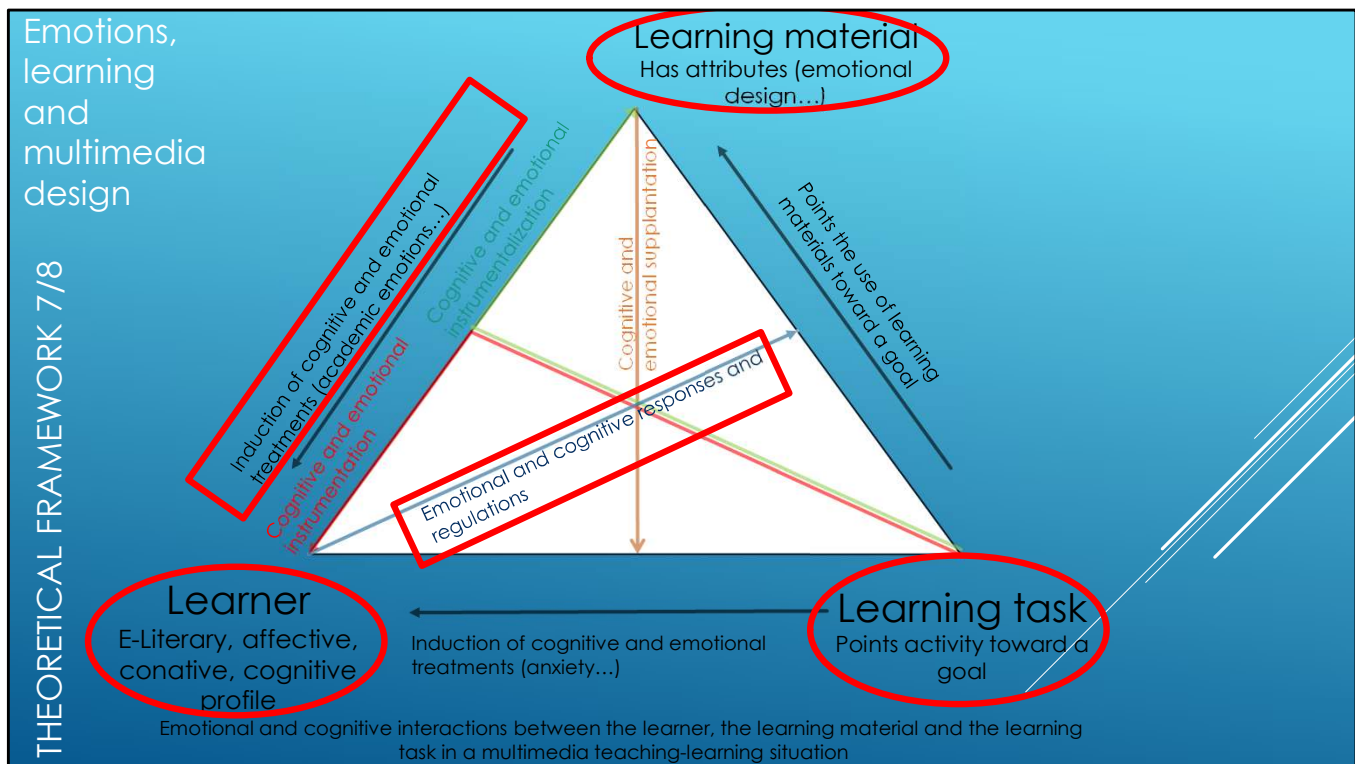


- I will now briefly mention some key processes at the heart of the teaching-learning situation in a multimedia context and the way in which we integrate them into our approach.
- Several essential processes contribute to the design of multimedia learning material and its use by the learner: ***mediatization (Peraya, 2010), ***supplantation (Salomon, 1979), ***instrumentation and ***instrumentalization (Rabardel, 1995).
- All these processes have been conceptualised according to a cognitive approach to learning.
- In the context of our work, we postulate that they can be envisaged in an emotional dimension ***.



- Concerning the mediatization, there are a number of techniques that can be used to mediatize content in order to make it easier to supplant it. In a video clip, some processes are based on technique, others on discourse. To borrow from Aristotelian rhetoric, they fall into three areas: ethos, pathos and logos. We are particularly interested in the rhetoric of pathos. This pathos is particularly prevalent in influencer-type youtubers, who frequently play on authenticity, humour and proximity to arouse emotions in their audience. We postulate that it largely explains their appeal to young people.
- In the video vignettes, this rhetoric of pathos is activated through a threefold staging:

- the staging of the socio-technical system
 - the staging of the speech
 - the staging of the speaker
- We think that whatever the rhetorical field exploited, the intention is always ‘supplanting’ in that it aims to activate automatic processing (in the emotional and/or cognitive register) in order to accelerate and/or reinforce the processes of selection, organisation and integration of information, which leads to a facilitated comprehension and retention of information.
 - With regard to supplantation, we put forward the hypothesis that certain emotions induced by the learning material can alleviate the affective and cognitive impact of other emotions induced by the teaching-learning situation, such as the stress induced by the learning task. We will therefore speak of emotional supplantation in reference to strategies for designing video clips which ‘supplant’ certain emotional processes, that is to say which help to manage or regulate emotions more effectively, thus enabling a person to concentrate on other aspects of their activity.
 - The same applies to the processes of instrumentation and instrumentalisation.



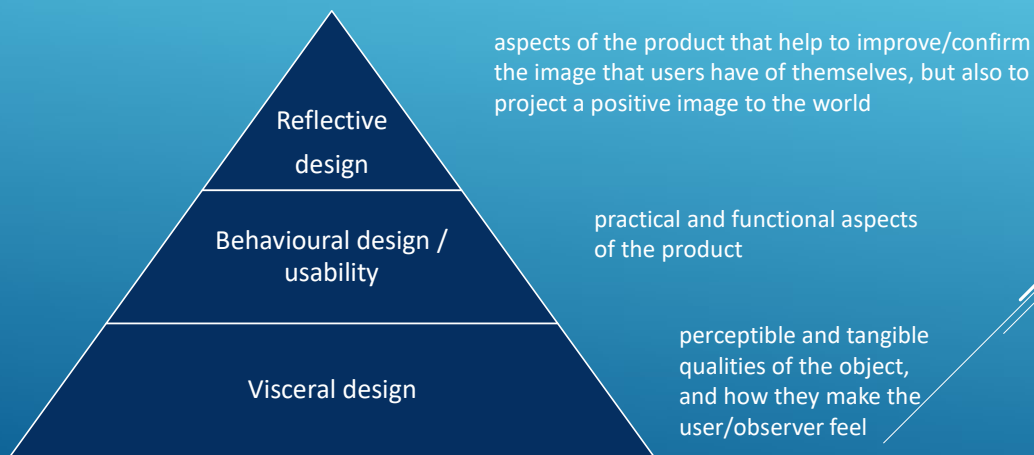
- Studies on the impact of emotions on learning in the multimedia field have multiplied since the work of Um et al. (2012). Overall, it appears that emotional design in multimedia learning can affect learning performance,
- but it is not yet clear whether emotional design can facilitate learning processes by evoking positive emotions during learning.
- The aim of our approach is precisely to study the link between the design of video clips, and more specifically the elements of design with an emotional impact, the emotions felt during the teaching-learning activity, depending on the learner's profile and the task, learning outcomes and the reciprocal effects of the one on the other.
- It is from this perspective that we draw on the concept of emotional

design developed by Norman.

Emotions, learning and multimedia design

Norman (2004) has identified three types of consumer cognitive response to product design :

THEORETICAL FRAMEWORK 8/8



- Norman (2004) approaches design not from the angle of learning, but from that of objects. Through his research, he has identified three types of consumer cognitive response to product design:
 - Visceral design refers to the perceptible and tangible qualities of the object, and how they make the user/observer feel
 - Behavioural design, or usability, refers essentially to the practical and functional aspects of the product
 - Reflective design refers to the aspects of the product that help to improve/confirm the image that users have of themselves, but also to project a positive image to the world
- In an educational context and applied to learning materials, the concept

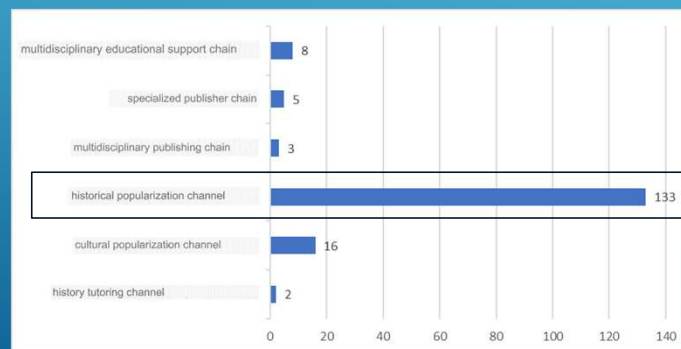
could be developed as follows :

- The visceral level, for example, could be observed when a history teacher uses an unexpected resource such as an extract from a mainstream film as a teaser document, in order to surprise his students.
- The behavioural level can be linked to the notion of usability in relation to technical qualities (sound, image) and multimedia ergonomics
- Finally, the reflexive level could be observed when a high school student is presented with a course with illustrations that are a little too childish, which may give them the impression of being ‘taken for a kid’.

In order to be able to identify the rhetoric of the pathos in the educational videos and the emotional triggers used by YouTubers to enhance the learning experience through these videos, we built an analysis grid based on Norman’s emotional design.

METHODOLOGY

- Research confined to the teaching of history – keyword « history »
- 168 channels identified in France dealing exclusively with history or with history-related topics on YouTube
- 6 main categories of chains



ANALYTIC GRID

I'm going now to explain the methodology I used to create this grid

- We confined our research to the teaching of history.
- With a view to conducting a qualitative and comparative micro-analysis, we have selected most popular YouTube channels, representative of the variety of strategies employed by YouTubers.
- To do this, we first identified a maximum number of channels dealing with history on YouTube. We typed the keyword 'history' into the YouTube search engine and scanned the algorithm's suggestions.
- We have identified 168 channels dealing exclusively with history or with history-related topics on YouTube
- Among Them we have identified 6 main categories of chain.

It's no surprise to see that most channels are run by independent Youtubers who are more or less amateurs.

8 channels :

- 4 hosted by professional youtubers ;
- 4 hosted by teachers: 2 individually, 2 on school support platforms ;
- 6 feature a visible speaker, 1 an avatar and 1 a voice-over.

a descriptive grid for the emotional design of video clips to better understand and identify the discursive strategies used by YouTubers to provoke emotions in their audience

elements :

- attributes that most of the videos have in common (behavioural design),
- those that distinguish them (essentially at the level of visceral design and reflexive design).

ANALYTIC GRID

- We have selected 8 channels representative of all the channels :
 - 4 hosted by professional youtubers
 - 4 hosted by teachers: 2 individually, 2 on school support platforms.
- Of these 8 channels :
 - 6 feature a visible speaker, 1 an avatar and 1 a voice-over;
- In our video selection, we usually chose the most viewed history video. When the subject was not related to the school curriculum, we selected the most viewed video that was related to the school curriculum.
- Based on the results of the exploratory analysis of the 8 videos, we produced a descriptive grid for the emotional design of video clips. The purpose of this grid is to better understand and identify the discursive strategies used by YouTubers to provoke emotions in their audience.

- It should be noted that the elements present in the grid were selected on the basis of the exploration of the corpus, by distinguishing the attributes that most of the videos had in common (essentially at the level of behavioural design), as well as those that distinguished them (essentially at the level of visceral design and reflexive design).

Dimension	Category	Sub category	Indicator	Quotation	
Visceral design = what makes the tool a pleasure to use	Staging of the socio-technical system	Visual aesthetic elements	Framing changes, zoom effects	0 - (never) 1 - (sometimes) 2 - (often)	
			Special effects, one-off supporting visual inlays (text or image)	0 - (never) 1 - (sometimes) 2 - (often)	
			Integration of learning materials (images, photographs, films, data tables, texts, etc.)	0 - (never) 1 - (sometimes) 2 - (often)	
			Involvement of a third party (physical or avatar)	0 - (never) 1 - (sometimes) 2 - (often)	
			Presence of redundant gimmicks	0 - (never) 1 - (sometimes) 2 - (often)	
			Change of scenery	0 – no 1 – yes	
	Staging of the speaker	Aesthetic elements of sound	Background music	0 - (never) 1 - (sometimes) 2 - (often)	
			Third-party voice-over	0 - (never) 1 - (sometimes) 2 - (often)	
			Special effects, occasional sound overlay (jingle)	0 - (never) 1 - (sometimes) 2 - (often)	
	Staging of the speaker	Language style	Variations in the rhythm and tone of the voice	0 - (never) 1 - (sometimes) 2 - (often)	
			Body language	Hand language, special gestures	0 - (never) 1 - (sometimes) 2 - (often)
				Mimics	0 - (never) 1 - (sometimes) 2 - (often)
			Changes in physical position (sitting, standing); moving around	0 - (never) 1 - (sometimes) 2 - (often)	

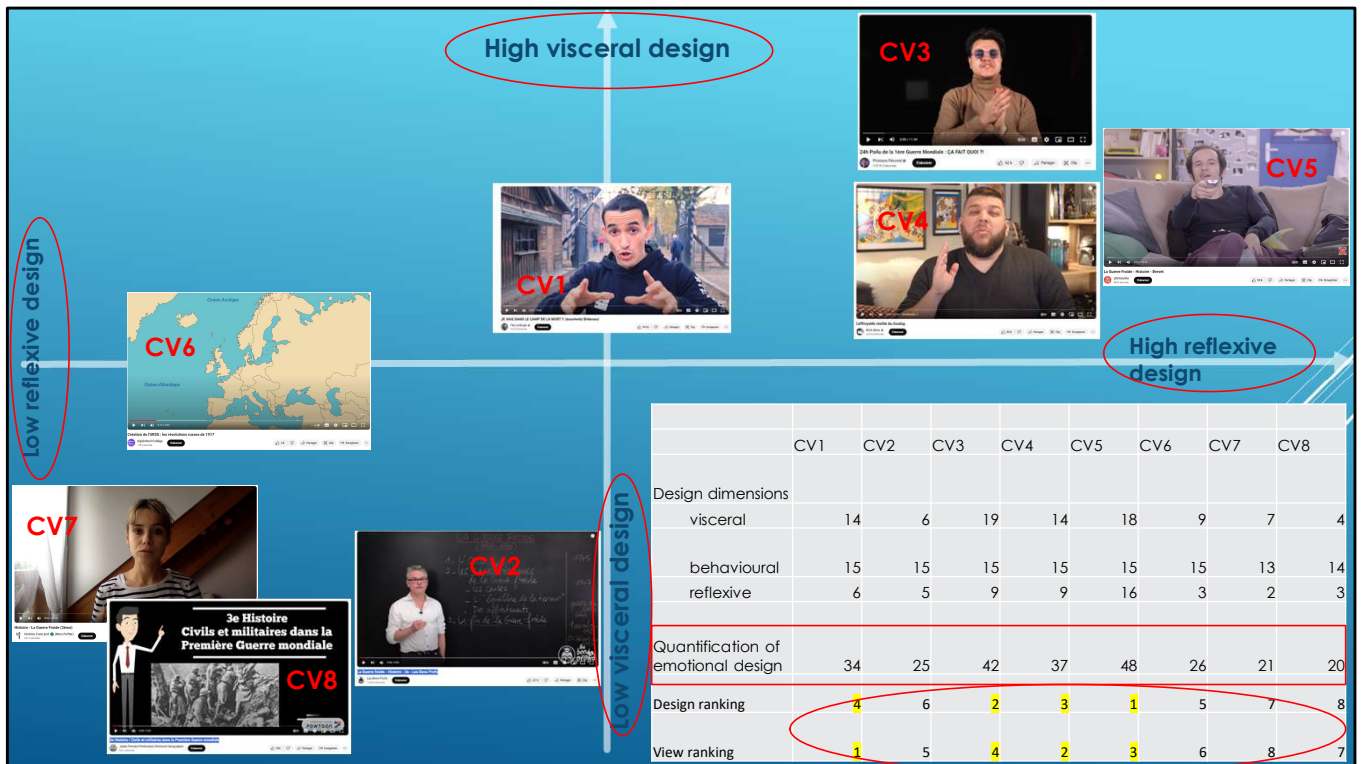
- In terms of visceral design, we have identified two main categories:
 - the staging of the socio-technical system with elements relating to visual and sound effects
 - the staging of the speaker with elements relating to his style of language and body language

Dimension	Category	Sub category	Indicator	Quotation
Behavioural design = what makes the tool ergonomic and usable	Staging of the socio-technical system	Technical and structural features	Video available	0 – no 1 – yes
			adequate sound quality	0 – no 1 – yes
			adequate image quality	0 – no 1 – yes
			Navigation tools (table of contents, navigation bar)	0 – no 1 – yes
			Viewing options (subtitles, translation, etc.)	0 – no 1 – yes
			Overall compliance with Mayer's (2008) main principles of multimedia ergonomics: principles of modality, coherence, signalling, redundancy, segmentation, contiguity	0 – no 1 – yes
		Interaction features	Possibility to leave a comment	0 – no 1 – yes
			Possibility to give a like	0 – no 1 – yes
			Possibility to subscribe	0 – no 1 – yes
			Possibility to share	0 – no 1 – yes
	Staging of the speech		Video responds to the need for information	0 – no 1 – yes
			Information tailored to the target audience	0 – no 1 – yes
			Accessible language	0 – no 1 – yes
			Speech rate adapted to understanding	0 – no 1 – yes
			Consistency of the script with the objectives pursued	0 – no 1 – yes

- In terms of behavioural design, we have identified two main categories:
 - the staging of the socio-technical system with technical and structural aspects and the presence of interaction functionalities
 - the staging of the speech with criteria designed to ensure that the content is adapted to the target audience and its needs.

Dimension	Category	Sub category	Indicator	Quotation
Reflexive design = that which helps to project a certain image to the listener	Staging of the socio-technical system		Number of views visible	0 – no 1 – yes
			Comments visible	0 – no 1 – yes
	Staging of the speech	Feeling of efficiency	Encouraging and reassuring words/tones that can induce a feeling of competence or success	0 - (never) 1 - (sometimes) 2 - (often)
			Comments that remind us that we're in a learning process, that we need to develop our skills, practical advice,	0 - (never) 1 - (sometimes) 2 - (often)
		Epistemic density	Links established with daily life, anchored in the present	0 - (never) 1 - (sometimes) 2 - (often)
			Avenues for further study	0 – no 1 – yes
	Staging of the speaker	Feeling of belonging	Part of an educational progression / link with the syllabus	0 – no 1 – yes
			Comments that refer to the culture of a specific community / sociotype	0 - (never) 1 - (sometimes) 2 - (often)
		Proximity and authenticity	Proposals inviting the receiver to leave a comment, to like...	0 – no 1 – yes
			Catchphrases / verbal clutch / questioning the speaker	0 - (never) 1 - (sometimes) 2 - (often)
			Use of slang expressions	0 - (never) 1 - (sometimes) 2 - (often)
			Use of humour	0 - (never) 1 - (sometimes) 2 - (often)
			Say « tu » instead of « vous »	0 - (never) 1 - (sometimes) 2 - (often)
			Personalisation of the speech / recount personal anecdotes	0 - (never) 1 - (sometimes) 2 - (often)
Academic posture	0 – no 1 – yes			

- In terms of reflexive design, we have identified three main categories:
 - the staging of the socio-technical system with the display of views and comments
 - the staging of the speech with elements of language that go beyond knowledge and enable the learner to develop a sense of competence and success
 - the staging of the speaker with elements of the speech that create authenticity and closeness with the audience.



- Applying this grid to our sample enabled us to:
 - Quantify the overall emotional design of each video clip
 - Objectivise the link between the emotional design of a clip and its success
 - Objectivise the discriminatory nature of visceral design and reflexive design in emotional design: vignettes with the strongest emotional design also have a higher visceral and reflexive design.
 - Position each video vignette along two axes:
 - o The extent of the visceral design (low to high): a capsule with a low visceral design is characterised by a limited use of visual and sound aesthetics, the absence of interaction functionalities and a very

academic posture on the part of the speaker. In contrast, a strong visceral design is fuelled by a large number of visual and sound effects and by a speaker whose language and posture create a close relationship with the learner.

o \$The extent of reflective design: reflective design is strong when the speaker goes beyond the strict transmission of information content by enriching it with anecdotes, advice, references to a common culture, etc.

- It would seem that the clips with the strongest appeal are those with the least academic staging and therefore the highest visceral and reflexive design.

- ▶ **The influence of the emotional design of educational video vignettes on the emotional and cognitive engagement of learners during an information search task.**
- ▶ The consequences for learning performance of the emotional interactions triggered by three video clip formats (filmed lesson, infography, 'YouTuber style video') as a function of external factors (anxiety linked to the learning task, political and family inclination to digital technology) and factors internal to the learner (e-literary, cognitive, affective and conative profile) from a socio-cognitivist perspective.
- ▶ Create educational video vignettes that will have the same information content, use the same documentary resources, be animated by the same speaker (who will intervene physically or orally) but whose emotional design will be very different in terms of viscerality and reflexivity :
 - ▶ weak viscerality and weak reflexivity (filmed lesson);
 - ▶ strong viscerality and weak reflexivity (infography) ;
 - ▶ strong viscerality and strong reflexivity (youtuber style video).

- ▶ \$We plan to study the influence of the emotional design of educational video vignettes on the emotional and cognitive engagement of learners during an information search task.
- ▶ \$with this in mind, we are going to set up an experiment on the consequences for learning performance of the emotional interactions triggered by three video clip formats (films lesson, computer graphics, 'youtuber style video') as a function of external factors (anxiety linked to the learning task, political and family inclination to digital technology) and internal factors (e-literary, cognitive, affective and conative profile of the learner) from a socio-cognitivist perspective.
- \$Thanks to our analysis grid, we are going to create educational video

vignettes that will have the same information content, use the same documentary resources, be animated by the same speaker (who will intervene physically or orally) but whose emotional design will be very different in terms of viscerality and reflexivity: weak viscerality and weak reflexivity (filmed lesson); strong viscerality and weak reflexivity (infography); strong viscerality and strong reflexivity (youtuber style video).

▶ If you have any questions or comments, please do not hesitate to ask or send me an email :

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▶ Thank you for your attention !