TPACK Model	Evaluation Criteria	Learning Environments		
		Public Library	Cable Television	World Wide Web
CONTENT	Quality of Academic Content: Credibility, Accuracy & Appropriateness	generally excellent quality of content, due to curation/filtering process	generally mixed quality of content, depending on the different channels' policies and practices Wide range of content domains covered	generally mixed quality of content, ranging from excellent to very poor Very wide range of content domains covered (and growing daily)
CONTENT & PEDAGOGY	Learning Standards, Learning Framework (TIP Model: Phase 2)	categorization of books is often aligned to classical knowledge domains of disciplines, but there is not necessarily a link to a school-relevant definition of learning outcomes that could be achieved with specific books	no direct and transparent links to any school-relevant learning frameworks or standards very often unclear what will potentially be learned while watching specifics shows	no direct and transparent links to any school-relevant learning frameworks or standards very often unclear what will potentially be learned while watching specifics shows

TPACK Model	Evaluation Criteria	Learning Environments		
		Public Library	Cable Television	World Wide Web
PEDAGOGY: Empirical	Impact on Learning Outcomes	it is hard to really know if public libraries have (had) a positive impact on specific learning outcomes, but they've been around for centuries and we see an increase of knowledge in the general public associated with the rise of public libraries (and with mandatory public education in general). It is generally accepted to think that such expensive public institutions, as libraries, must have (had) a positive impact on learning, otherwise the investments would seem unwarranted.	most educators and scholars would probably tend to emphasize the negative impact of TV consumption more than its positive effects on human intelligence and cognition; but it is rather clear that there is a measurable impact of watching TV on what we think and how we think. Some researchers stress the more positive effects that it has on our abilities to follow complex, multi-track stories, while others stress its negative effects on our abilities to focus our attention and to create own our frameworks to construct meaning	as far as I know, there is no clearly structured body of scientifically valid knowledge showing that the www, in general, has (had) a positive or negative impact on students' learning outcomes; but, like with public libraries, we tend to think that the availability of such a huge amount of knowledge (and its constant grow) must have (had) a positive impact on our (collective) intelligence in terms of the complex problems that we are able to solve, in a very short period of time and quite effortlessly. On the other hand, such ubiquitously available knowledge must have (had) a negative impact on our abilities to memorize (in our brains) important knowledge and to easily distinguish "true" from "false".

TPACK Model	Evaluation Criteria	Learning Environments		
		Public Library	**Cable Television**	**World Wide Web**
PEDAGOGY: Theoretical & Empirical	Relative Advantages (potential and real) (TIP Model: Phase 1) SAMR Model: Enhancement vs. Transformation --- Relative Disadvantages	Compared to earlier learning environments, mostly those based on oral transmission of knowledge, public libraries have the advantage of making available the knowledge and wisdom of other human beings that are (eventually) very far away from the learners in terms of space and time. Books are very appropriate to convey complex, highly abstract arguments in the form of a “closed experience” on which learners can focus for a while. **However, learners must be skilled readers, i.e. they must know where to find which pieces of knowledge, how to use books, how to decode written language into meaning, etc.**	Compared to earlier learning environments (and their educational technologies), mostly those based on oral and those on written transmission of knowledge, television has the advantage of making knowledge and wisdom of other distant human beings available in your home (or any other place) and in a format (audio-visual) that is very easily accessible to any human being, because it relies on the use of biologically primary cognitive abilities (Geary and Bjorklund, 2000), like understanding speech, social interactions, movements, etc. **However, TV is not very appropriate to convey complex, highly abstract arguments, or at least not better than an oral exposé.**	Compared to previous learning environments, implementing oral tradition, written transmission and audio-visual presentation of knowledge, the world wide web has the advantage of being able to combine and mix all these different channels and media. The web 2.0 even allows a more radical transformation of our modes of interacting with global knowledge, since it allows each and every consumer of knowledge to be a producer and publisher of knowledge, without the huge cost and logistic hurdles of other media. **However, you need to have access to an internet connection device and a high-speed internet connection to really enjoy these advantages.**

TPACK Model	Evaluation Criteria	Learning Environments		
		Public Library	Cable Television	World Wide Web
PEDAGOGY: Theoretical	Learning Theory Foundations	there are no explicit learning theory foundations for this learning environment, but it is reasonable to say that it is build on an implicit theory of instructionism, i.e. learning is an act of being exposed to high-quality knowledge and soaking that knowledge up into your brain/memory; teaching corrolarly is the act to exposing learners to such high-quality knowledge.	there are no explicit learning theory foundations for this learning environment, but it is reasonable to say that it is build on an implicit theory of instructionism combined with multimedia and entertainment, i.e. learning is an act of being exposed to high-quality and easily-accessible knowledge and soaking that knowledge up into your brain/memory; teaching corrolarly is the act to exposing learners to such high-quality and easy-to-digest knowledge.	there is no single explicit learning theory foundation for this learning environment; there are rather a variety of learning theories at work here for different parts of this vaste heterogeneous ecosystem. Some parts are clearly based on instructionism (teaching means presenting knowledge), others on behaviorism (teaching means associating certain stimuli to certain other stimuli; associating certain reactions (rewards & punishments) to certain behaviors, given certain stimuli, others again on constructivism (teaching means helping learners to build mental constructs), and others on socio-constructivisms (teaching means helping learners to become proficient members of a socio-cultural community of knowledge/skill practicionners)

TPACK Model	Evaluation Criteria		Learning Environments		
			Public Library	Cable Television	World Wide Web
PEDAGOGY: Theoretical & Practical	Appropriateness for Diverse Learners	Special Needs	Some libraries may offer books for people with visual deficiences, but not all books are available for blind people.	TV shows can be consumed by blind people to some extend, because they contain audio channels conveing part of the information; some shows offer visual commentaries in addition. TV shows can be consumed by death people to some extend, if subtitles and/or closed captions are included. It is also possible, if combined with a video recorder, to pause, rewind and rewatch a TV show.	Some webpages provide access to information for people with special needs, like reading out webpages.
		Age Needs	Learners of various ages can normally find developmentally-adequate media, based on “age labels”, but without propper “parental guidance” they may gain access to content that some may see as age-inappropriate	Learners of various ages can normally find developmentally-adequate media, based on “age labels” or age-specific channels, but without propper “parental guidance” they may very easily gain access to content that some may see as age-inappropriate	Learners of various ages can normally find developmentally-adequate webpages, but without propper “parental guidance” they may very easily gain access to content that some may see as age-inappropriate
		Cultural Needs	Learners with various cultural backgrounds may choose to use educational media offered by libraries, but the adequation really depends on the variety of books on stand.	Learners with various cultural backgrounds may choose to use educational media offered by cable TV, but the adequation really depends on the variety of channels available.	Learners with various cultural backgrounds may choose to use educational media offered on the world wide web, but the adequation really depends on their ability to search and find them. Since most of the web is still in English, some cultural groups may feel that they do not have access to culturally-adequate content.

TPACK Model	Evaluation Criteria		Learning Environments		
			Public Library	**Cable Television**	**World Wide Web**
		Learning Styles	Libraries (and the books they contain) are mainly adequate for people with a **verbal** (linguistic) learning style, i.e. those who prefer using words, both in speech and writing; those with a **logical** (mathematical) learning style, i.e. those who prefer using logic, reasoning and systems; and those with a **solitary** (intrapersonal) learning style, i.e. those who prefer to work alone and self-study	Televisions (and the show they show) are mainly adequate for people with all learning styles, except those with a physical (kinestetic) learning style. It depends on the particular shows which learning styles are more or less sollicitated. You may for instance watch TV alone (solitary) or together with peers (social). TV is clearly adequate for people with more **visual** and **aural** learning styles.	The world wide web with its large variety of different media contents and formats can be suitable for people with **nearly any learning style**, except those with a physical (kinestetic) learning style (even though current technological innovations, like motion control interfaces tend to make the Internet more accessible for more physically-oriented people). It depends on the specific webpages whether they are more visual, more aural, more verbal etc. Some encourage a more solitary approach, others require a more social approach.

TPACK Model	Evaluation Criteria	Learning Environments		
		Public Library	Cable Television	World Wide Web
PEDAGOGY: Practical	Links to Wisdom about Effective Teaching Practices	Books are strongly linked to traditional wisdom about effective teaching practices, quality of learning (directly) depends on the quality of the information contained in the books “consumed” and on the learners (mental) abilities to decode the information embedded in the letters and words. Teachers are there to help learners choose valuable sources of knowledge and develop the decoding skills needed to get acces to this knowledge.	Television shows have a mixed reputation with teachers. One view is to consider audio-visually presented imformation as of lesser value, because learners do not have to make such a big effort to decode the information embedded in orally or in visually presented explanations and illustrations. The other view is to see audio-visually presented information as an extension of traditional one-to-many teaching (lecturing), expect for the eventual and rare interactive moments, when learners ask questions.	For the world wide web with its large variety of different media contents and formats it all depends on the specific webpage we are looking at. Generally, the Internet is not seen as a valuable educational source, by some, because they claim that it contains a lot of content of very low quality and that it is more a distraction to learners than a valuable learning place. Moreover, they may feel that the internet, by its very nature, is very subversive to our standard, traditional views on effective teaching, because it undermines our beloved idea of “authoritive” and “every-valid” knowledge. However, other educators may see the web as an collaboration, production and publication tool that is very much in line with their own traditional teaching practices, based on socio-constructivist views of learning.

TPACK Model	Evaluation Criteria		Learning Environments		
			Public Library	**Cable Television**	**World Wide Web**
	Match with existing Learning & Teaching Practices, Learning & Teaching Affordances (What can you do with it? Which roles does it attribute?)	Teachers	Teachers act as filters that orient learners to valuable sources of knowledge, and as commentators. Moreover they need to help their students to develop the decoding and memorisation skills needed to "soak up" knowledge from books.	Teachers act as filters that orient learners to valuable sources of knowledge and as commentators. Moreover they need to help their students to develop the decoding and memorisation skills needed to "soak up" knowledge from TV shows.	Teachers can feel obsolete and/or overwhelmed by the world wide web as a teaching tool, because they can no longer "control" which content is accessible for their students and which content they may choose to believe in. Teachers are surely not longer the sole sources nor guardians of high-quality knowledge when their students have access to the world wide web.
		Students	Students decode words, sentences and books and attempt to store the extracted knowledge in their brain-based memory. They may choose to close a book and open another one if they feel that the information presented in the first one is not relevant to them. But within a given book they are reduced to their "traditional" role of knowledge consumers. Most libraries do not allow students to work together and vividly discuss what they are currently learning, except in dedicated rooms.	Students extract knowledge from orally commented and from visually presented scenes and attempt to store the extracted knowledge in their brain-based memory. They may choose to change channels if they feel that the information presented is not relevant to them. But within a given show they are reduced to their "traditional" role of knowledge consumers. They may discuss what they see and extract from a show with their peers and their teachers, if watching the same show in the same room.	Students can autonomously choose which content they want to "consume" and process, in a radically new way because of the ease of access to a huge variety of webpages. They can often become commentators of knowledge themselves or even act as producers and publishers of knowledge. They can collaborate with their peers and discuss what they are learning in a variety of vivid ways. This may not be a role that they are all familiar with or that they would recognize as a legitimate role for learners.

TPACK Model	Evaluation Criteria		Learning Environments		
			Public Library	Cable Television	World Wide Web
	Need for Pedagogical Training and Support		Given that most (if not all) teachers have been trained as students to use a library and a book for learning purposes themselves, there is not need for pedagogical training.	Given that most teachers have been exposed to (educational) TV shows, but have no formal training in how to effeciently extract relevant information from them, some may feel the need for pedagogical training when it comes to using TV shows in their classrooms. Others may just think that students know how to extract relevant information from an audio-visual presentation and feel no need for pedagogical training.	Most teachers will probably have some experiences with the world wide web, but not all will have experienced the web as a formal learning environment and may thus feel the need for pedagogical training, namely addressing the question of how to cope with the vast and increasingly vast amount of information “out there”... Others may have recognized the subversive powers of the web and may feel the need to know how to use the web in order to underscore their more socio-constructivist / inquiry-based and project-oriented teachings strategies.
TECHNOLOGY	Based on Existing Skills & Knowledge	Teachers	If we assume that book-based knowledge and skills are the norm, then the use of a public library as a learning environment is very much based on existing skills & knowledge for teachers	If we assume that next to everybody has some expertise in using a cable TV set, then the use of a TV set as a learning environment is very straightforward, for teachers.	For all teachers, the use of the world wide web will be based on existing skills and knowledge, like reading and critical thinking; and for some the web requires other skills that they lack, while others will be very familiar with it.

TPACK Model	Evaluation Criteria		Learning Environments		
			Public Library	**Cable Television**	**World Wide Web**
		Students	Students may need to learn how to use a library catalogue in order to find the books they may need to read. If, however, teachers simply tell them which books to "consume" and process, then they can use this type of learning environment based on their existing skills & knowledge (assuming they have some basic literacy skills)	If we assume that next to everybody has some expertise in using a cable TV set, then the use of a TV set as a learning environment is very straightforward, for learners. They may have to develop some new skills in terms of media competency and critical thinking, but the manipulation of hardware is very easy.	For all students, the use of the world wide web will be based on existing skills and knowledge, like reading and critical thinking (at least for advances learners); and for some the web requires other skills that they lack, while others will be very familiar with it.
	Ease-of-Use	Teachers	very easy to use	very easy to use	it all depends on the particular webpages that teachers are using.
		Students	very easy to use if the basic reading skills are established.	very easy to use	it all depends on the particular webpages that students are using.
	Need for Technical Training	Teachers	no particiular need for technical training, maybe some teachers may need to learn how to use a photocopying machine if they want to reproduce certain parts of a book for their students to read.	no particular need for technical training, if we assume that most adults and kids nowadays have extensive experience with TV sets.	it depends on the particular webpage they are using, but generally the use of the www as a knowledge source is quite easy, while its use as a knowledge publication place may require some more extensive technical training.
		Students	students need to learn how to manipulate books, but that is very easy to learn and should take very little time.		

TPACK Model	Evaluation Criteria	Learning Environments		
		Public Library	**Cable Television**	**World Wide Web**
	Vulnerabilities: Risks of Failure	Books are fragile objects, they may be destroyed by physical acts of (intended or unintended) violence. Otherwise they are quite robust knowledge and learning media.	TV sets rely on electrical power and on the quality of their connection to the broadcasting network (cable, airwaves or satelite) and may thus cease to work properly in cases of failure of the power grid and/or the broadcasting network. They can also cease to work for internal reasons, like parts failing to function.	The world wide web as a networked infrastructure is a highly robust knowledge medium, however, on a local level, the access to the web can have several vulnerabilities all related to failures at various levels of this connectivity: the internet connection device, the uplink to the web, intermediaire nodes to the webserver on which a particular webpage is hosted.
	Implementation Costs	I do not really know how expensive it is to set up a public library, but it is certainly not cheap, because it implies setting up a building, bookshelfs, tables, chairs, lightining, etc. and buying books.	If you merely need a TV set and a cable TV connection to a broadcasting network, then the implementation costs are quite low. If you also count the costs spent by the procuders of TV shows, then the costs are astronomical.	I do not really know how much the implementation of the entire world wide web has costed humanity, but its certainly not cheap. However some of the most valuable contents that are available on the web have been put there for free by amateurs and professionals alike.
	Need for Technical Support	In order to successfully run a library of value technical support is needed, namely people who buy books, categorize them and put them on the shelves, and manage the lending out of books to users.	Simply using a TV set to watch educational shows needs no technical support whatsoever. There may be some need for technical support when it comes to pre-recording a show and watching it later.	There is some need for technical support if you want to use the web as a learning environment, depending on the number of internet connection device that you have to setup and manage as well as on the abilities of learners to setup and manage these devices themselves.

TPACK Model	Evaluation Criteria	Learning Environments		
		Public Library	**Cable Television**	**World Wide Web**
	Need for Supplementary Materials	Not sure whether additional materials are needed to use a library as a learning environment. Probably one could use it as-is.	Not sure whether additional materials are needed to use a library as a learning environment. Probably one could use it as-is.	Not sure whether additional materials are needed to use a library as a learning environment. Probably one could use it as-is.
	Sustaining Costs	Sustaining a public library is quite costly, if you count the salaries of the personel working their and the need to buy new books and replace old ones that “fall into pieces”. As an end-user you pay for these costs via public money expenditures.	If you a consumer of TV, the costs to keep using it are quite low; all you need is to pay the annual cable tv fees, as long as you are happy with the content available and can live with the consequences of consuming advertisment. However, if you count all the production and diffusion costs, it is very costly to sustain an educational TV channel.	In order to keep using the world wide web as a learning environment you need to keep your infrastructure up-to-date, in terms of internet connection devices, the connection network and the software tools used to browse the web.

EVALUATION	Learning Environments		
	Public Library	**Cable Television**	**World Wide Web**
access to knowledge	free access to large amount of knowledge	access to easily and broadly accessible knowledge	free access to the biggest source of knowledge on earth
ease-of-use	books are easy to use in terms of technical skills needed	TVs are very easy to use in terms of technical skills needed	searching the world wide web for information is very easy and very fast, from a technical point of view, but it requires some training to become a power user.
spatial constraints	you need to go to a public library, which may be more or less far away	you can watch tv at home as long as you want, no need to go somewhere else	you can use the web wherever you have access to an Internet connection
temporal contraints	you cannot use a public library outside of opening hours	you are bound to the programming of TV shows by the broadcasting companies and cannot choose to watch what you want when you want to.	the world wide web is available 24/7
quality of knowledge	generally seen as of very high quality	generally seen as of mixed quality	the full continuum from very poor to very high quality
role of learners	consumers	consumers	consumers & producers
match with traditional views on education and teaching	very high	compatible, but controversial because of the “fun” aspect	subversive to some and thus likely to be seen as undesirable or even dangerous

Legend: green cells = positive aspects --- orange = negative/positive aspects --- red = negative aspects

REFERENCES

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