

PapillonMethod (PaM)

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Abstract

The **Papillon-Method** is a free, independent, nonlinear presentation and interpretation of knowledge. It generates an interlinked "rhizomatic" [1] knowledge world, that turns around a topic, and illuminates it in all of its depth. The method produces through its various perspectives [2] and viewpoints flexible content in contexts as well in various multiplicities. This creates a picture of unity and diversity in terms of an open world view as necessity for living in a complex, multidimensional, global society. The Papillon-Method focuses on the consistently multiple interlinking of knowledge as the essence of 21st Century.

The metaphor of the butterfly led to a more abstract approach to the concept as a free and independent system for generating dynamic content and is based on an innovative interdisciplinary educational approach.

Key Words: Nonlinear, Metacognition, Epistemology, Knowledge Integration, Interdisciplinary Methodology, Critical Thinking, Learning Motivation, Contextualized Interaction for Learning, Depth Model in Narrative, Creativity Technique, Dynamic Content, Interactive Books

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Definition

Papillon is a teaching and learning method adapted to the 21st Century. The global education concept is characterized by a multimedia, narrative staging of knowledge. Global is to be understood here in a dual sense, both as holistic learning as well as learning that makes a world reference for the own reality of life.

The approach means also a further development of the well known "static" format for eBooks and follows a special architecture. Interactive keywords provide in-depth and interdisciplinary insight in a prescribed or self-selected topic. The concept favours an interdisciplinary approach [3] [4] and thrives on its diversity of views and topics. It is transferable to all digital texts and grows with knowledge like a living organism, creates, uses, reuses and improves continuously new things. By applying the Papillon-method online books are transformed into a huge dynamic ecosystem of knowledge.

The innovative universal principle adapts learning content to the challenges of an increasingly

converging world. It offers children a key, to adequately deal with topics of a totally changed global world. Aim of the innovative PaM is a vivid, emotional and instructive application of knowledge through the active involvement of the learner. Knowledge to apply is one of the key skills, that students make successful.

Sociologist John W. Meyer is the opinion that it gradually comes to a connection of national education systems towards to a kind of global education apparatus, and finally "to a high degree of internationalization of educational content both in general as well in higher education and to a wide dissemination of the educational definition of the world as a common humankind and common living space". [5]

Architecture

The architecture of the educational concept is based on narration and interaction. The hybrid system combines the advantages of static and dynamic representation of contents. PaM offers a real and an imaginary level.

1. The real world of knowledge.
2. A fictional world of characters and stories.

With these two levels, learners can interact and offer the mind a stimulating cocktail of reward and discovery. Virtual learning environments and context-based interaction [6] changing the structure of brains, influencing life-long learning abilities and reshape the brain networks [7] [8] that support basic cognitive skills such as paying attention, reading and mathematics.

Level of narration

Learning needs pictures and stories [9] [10] which stay in mind to show brittle, abstract contents in a vivid and understandable way. Stories with their colorful world of images are able to fulfill this task. They smooth the way for a magnificent imagination and encourage creativity [11], reading motivation and language skills. Reading [12] [13] is the most important prerequisite for learning success.

In addition virtual characters are included into the real learning process. They represent various attitudes and behaviour. Their contrary opinions include learners in the discussion and enable an educational entrance due to dialogue. The applied narrative structure is suitable for controversial dialogues. Students learn to accept other viewpoints and reduce conflicts. The ability to see things in a different light, ie to understand the subjective perspective of the other person without giving up his own position, promotes tolerance and respect.

“Narrative can be a powerful tool for the creation of a variety of contexts suitable for different learning situations, by stimulating learners’ direct involvement and offering a concrete starting point for reflection”. [14] The potential of narrative in education can play a positive role in the creation of meaningful learning contexts.

Level of interaction

In the process of the narrative a thematic orientation will be recommended which will allow a 3-dimensional view on a topical focus [15] by combining diverse systems, such as videos, encyclopedia articles, images, animations, games, maps, virtual tours, to give a deeper insight into a topic. This method promotes multifunctional, critical thinking and creates contextualized interaction for learning.

Seemingly diverse themes will be linked into a unique interdisciplinary universe of knowledge and due to the level of narration knowledge will be produced multimedia-based. Analog view of a topic does not encourage thinking in contexts. Making a thought more flexible also helps to get closer to the solution of a problem. A wide, cross-subject education and cross-border thinking challenges children to ask questions, show curiosity and to change their perspectives.

This system of complex universal spirit allows children to see our world in a global context, fosters a creative mind as well as analytical abilities, teaches playful learning and motivates students to develop their own ideas. The narrative keeps the priority even when the learner follows his/her thematic interest. "Playing and learning are two sides of the same coin. If one side is omitted, the development is insufficient", opines Prof. Fthenakis [16], Professor for Developmental psychology and anthropology at the Free University of Bolzano Italy. Therefore, play-related elements also known as educational entertainment [17] should be integrated more into the formally organized learning process in order to challenge the students to the proper extent.

Empirical findings have consistently shown that dynamic media facilitate the comprehension and transfer of knowledge in individual learning. [18]

Delimitation to conventional methods

The learning concept presents a new way of conception of contents which differs fundamentally from traditional learning methods and the already known e-learning. It goes way beyond pure e-learning-usage and outlines a contrast towards the known click and pick. The space of knowledge will be flexible shaped by the virtual world. Learners can often get forward only page by page or navigate at most via the fixed structure of the index. But exploratory learning, the discovery of the contents over its coherences fails because of missing links. To tie contextual links among and between study units offers in this method the possibility to provide flexible linked information due to an attractive concept. Simply linked text line is extended by multiple links and can stored directly into the document.

Widely scattered information are ordered by theme and are brought into a coherent form. The combination of different multiple disciplines to a topic make content alive and updatable, provide multi-perspective views and promotes the ability to orient between virtual and real worlds. „By requiring the student editors to select from a wide range of materials only those bits of multimedia information that they judge appropriate for their audience, learner were encouraged

to thoroughly evaluate the importance and relevance of the content material, as Perkins (1985) suggests when he states that teachers and students should "design knowledge". Quellmalz (1985) defines higher order thinking as occurring when students identify the job to be accomplished, define its essential elements, judge and connect relevant information and evaluate the adequacy of that information.“ [19]

This kind of knowledge integration [20] creates multiple interpretations of a subject and can generate broad linked knowledge value chains. It fosters a different way to think and act - an essential need for living in a highly networked society [21] [22].

The advantage reaches to the emotional [23] motivating effects which are generated due to the identification with the characters, the exciting narrative level and the variety of themes of the active level. With this kind of learning is planted the germ of curiosity in students. Learning results and motivation will be achieved when knowledge coherences are exploited and this exploration can be repeated self-dependent by the learner.

Principle

Papillon [Butterfly] is the name and the principle of the educational concept. Butterflies represent metamorphosis and change. Their flutter from flower to flower is a symbol of the central principle: **multiple interlinking** [24] to examine a central theme from more than one discipline because everything is connected in our global world.

“Children must be given the opportunity to view a certain aspect from different perspectives. This is how they learn the same content in all of its complexity and learn in the process that different perspectives can result in different assessments.” Prof. Vassilios Fthenakis

The principle is based on an interdisciplinary and narrative presentation of knowledge. By merging seemingly oppositional themes such as nature and culture, art and science, tradition and new media, book and internet grows an interdisciplinary universe of knowledge. Just like a butterfly students are able to leave the classroom to learn in fascinating multimedia worlds, without being limited by time or space. PaM knowledge spaces are experienced emotionally, socially and empathically [25]. Pure knowledge is not enough to be innovative. Only when individual knowledge is recombined, then one can think of new and surprising solutions come to light. Pablo Picasso combined a bicycle saddle with a handlebars and out came "Bull's Head" (1942). [26]

With a new holistic view and with respect of the complexities of nature and society networked thinking and action will help to have a better understanding of the diversity of the global world and to solve the problems of the future. “The traditional reductionist approach to the study of phenomena is beginning to give way to the pursuit of "big picture" questions about the nature of reality and the meaning of existence-which require a more interdisciplinary perspective.” Jeremy Rifkin.

River diversion, for example, is a complex system. Every drop of water is a sensitive part of global water system that fulfill many tasks. Therefore, researchers need to examine all the factors together: climate, geology, land use and settlements. There is no simple answer only an answer in a context. Small deviations can change in the long term a whole system completely and unpredictable. [27]

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