# Comparison

Since the notion of adaptive hypermedia was first described back in 1993 by Brusilovsky et al.⁴ there have been many projects in this field. Several universities and other research groups created their own platforms. Every adaptive hypermedia engine created has its own input format and inner workings, and thus there is a variety of authoring environments to match these platforms. These environments vary greatly in form. They range from simple text editors to extensive toolkits in which even content creation is possible. By content creation we mean the creation of the actual pages shown by the adaptive hypermedia engine, which is different from content authoring, where concept domains and adaptivity itself are declared and created.

A big issue in the scientific publications of hypermedia is that, while there are many papers on adaptive hypermedia engines and their impact compared to conventional hypermedia, there are not many extensive publications on authoring and creating material for these engines. This is a strange phenomenon, as the acceptance of adaptive hypermedia relies not only on the content user, but also on the content authors and creators. Therefore it is vital to provide a high quality authoring environment with which content providers are willing to work. More research and development of this facet of adaptive hypermedia will most definitely contribute in its acceptance and real-world application. In this section we will compare the new authoring environment to GALE to several other similar toolsets.

Foss and Cristea based their comparison of MOT 3.0¹ on two sets of imperatives: complexity imperatives and and support imperatives. Gaffney et al proposed to extend these imperatives with a set of user experience (UX) imperatives in their evaluation of the AMAS 2.0⁷ authoring environment. These imperatives are equally important as the acceptance of adaptive hypermedia systems and their authoring tools are based significantly on user experience.

|  |  |  |
| --- | --- | --- |
| **Complexity imperatives** | **Support imperatives** | **UX imperatives** |
| separation of concerns | adaptive functionality | Style |
| use of frameworks | simple access to content | Color |
| use of standards | shallow learning curve | Look and feel |
|  | familiarity |  |

## Comparison candidates

The main candidates for comparison are MOT, Netbook and. These tools are selected as the publications describing them are fairly recent and well-cited, meaning they are widely recognised within the scientific community.

Major problems in authoring are(6) :

* complexity
* new and alien process to most authors
* flexibility

1 has some imperatives usable to create comparisons

* complexity imperatives
* support imperatives

KBS hyperbook(2)

* uses bayesian network for authoring
* seems to work with only prerequisite structures

Interbook

* allowed for easy authoring, but couldn’t build much more than a prerequisite structure(1)
* Another problem with such authoring tools was that they were not easy enough for non-experts to use.

MOT(1)

* helps non-expert users to make content ready to use in adaptation
* authors for AHA or ADE
* aims at low learning curve
* built with AJAX/JS/HTML
* also supports page (content) creation
* helps users adapt existing content to be usable
* only creates domain?
* PEAL used for adaptation strategies
* provides support for coding (basically a text editor)
* public/private saving

WHURLE

* the adaptation is limited (only adaptation to 3 types of learners possible)
* the authoring is difficult (editing of XML files)

PERSEUS/PEGASUS(3)

* Defines class hierarchy
* creates objects of these instances
* object orientated paradigm
* adaptation on page level.

WOTAN

* showed promise in terms of graphical authoring
* suffers from a higher level of complexity
* has issues with scalability.

NetCoach(5)

* Moves code away from user
* all rules predefined
* multiple test options
* geared towards e-learning
* layout/content authoring support
* includes tutor interface (which is nice)
* authoring without programming knowledge. Yet pages in html / options look pretty tricky. (target is non-programmer non AH authoring expert)

AMAS(7)

* focussed on user experience
* no code!
* activity based autoring
* graphic interface
* interface found to be good as confirmed by pedagogical experts
* paper focus on look and feel. not on functionality

GIFT (gifttutoring.org)

CTAT

ELM-ART

1. The next generation Authoring Adaptive Hypermedia: Using and Evaluating the MOT3.0 and PEAL tools - Foss + Cristea
2. Student Modeling for the KBS Hyperbook System using Bayesian Networks - Nicola Henze, Wolfgang Nejdl
3. An Authoring Tool for Building Adaptive Learning Guidance Systems on the Web - José A. Macías and Pablo Castells
4. Brusilovsky, Peter, Leonid Pesin, and Mikhail Zyryanov. "Towards an adaptive hypermedia component for an intelligent learning environment." *Human-computer interaction*. Springer Berlin Heidelberg, 1993. 348-358.
5. Weber, Gerhard, Hans-Christian Kuhl, and Stephan Weibelzahl. "scho."*Hypermedia: Openness, Structural Awareness, and Adaptivity*. Springer Berlin Heidelberg, 2002. 226-238.
6. Foss, Jonathan GK, Alexandra Cristea, and Maurice Hendrix. "Continuous use of authoring for adaptive educational hypermedia: a long-term case study."*Advanced Learning Technologies (ICALT), 2010 IEEE 10th International Conference on*. IEEE, 2010.
7. Gaffney, Conor, Owen Conlan, and Vincent Wade. "The AMAS authoring tool 2.0: a UX evaluation." *Proceedings of the 25th ACM conference on Hypertext and social media*. ACM, 2014.