

# MULTIMEDIA AUTHORIZING TOOLS FOR EDUCATION: COST vs BENEFITS

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*Abstract:* Since the explosion in multimedia computing, the bet was to work our way towards an integrated human – computer interaction. Consequently, a generous number of multimedia tools has been created since then always obeying the concept of simpler and easier multimedia development. This article outlines a large variety of products through the prism of low cost and effectiveness. Based on a 44 multimedia authoring tool survey, this article outlines the market status trying to find a multimedia authoring tool that could be used in the educational field. In other words, the whole “fuss” is about finding a tool that is easy to use and cheap enough to serve as a widely accepted tool in education.

*Key-words:* Multimedia authoring tools, Educational multimedia, Multimedia software review

## 1. Introduction

Since composing multimedia presentations is a procedure far more complex than writing plain text [2] early came the need for special tools. At first, the whole game of multimedia authoring was played in the area of plain *programming* languages. Despite the power of those, that came to a cost as much time and effort was needed in order to compose a decent application. The introduction of *authoring languages* saved the day up to a point; authoring languages worked only within the limits of a confined set of multimedia-related commands. Unfortunately, the problem in this case was the strict standardization of the results and the inflexibility of the whole concept [4].

At last, during the previous decade, *authoring*

*systems* came to light. These were – and continue to be – more complex development environments that allow users with no special programming skills to compose multimedia presentations interactively and visually. That implies the use of menus, wizards and other graphic components instead of old fashioned verbal commands. Of course, developing possibilities of authoring systems are still far less in comparison to programming languages due to the exchange of low level programming details that handle multimedia objects [3] for convenience. However, not only the former offer new, easier ways of executing most common commands, but usually incorporate a “script editor” that simulates the latter, as well.

Analyzing authoring systems further, it has to be stated that, at first, it was all about applying interfaces onto authoring languages and nothing more. This merely meant materializing

the idea of combining command modules for experienced users with GUIs (Graphic User Interfaces). However, next generations of similar packages were based on different concepts [4].

The purpose of this article is to shed some light on questions like “How much one has to sacrifice an educational multimedia authoring package?” and “what basic characteristics can be expected by an educational multimedia authoring tool?” In a few words, the whole point is to give a global view of the multimedia authoring field while detecting any blank spots.

## 2. Data

Table 1 holds basic information regarding 44 programs that the current market status has to offer. The presented data is a small part of a full survey that was held by studying each package separately and standardizing it as much as possible. The base of this standardization was provided by a notable effort made by [5] that used tags like *Variety of designed applications, user interface, test questions, multimedia, communication with other programs, branching and scripting* to describe each package in a collective manner.

The table offers the data in the format “Program / Company / Price”.

Table 1: Programs

Authorware <i>Macromedia</i> \$2999	CBTMaster Lessons <i>SPI</i> \$49	DazzlerMax Deluxe <i>MaxIT Co.</i> \$1995
Director <i>Macromedia</i> \$1199	EasyProf <i>EasyProf</i> \$1105	eZediaMX <i>eZedia</i> \$169

Flash <i>Macromedia</i> \$499	Flying Popcorn <i>Parasys</i> \$149	Formula Graphics Multimedia <i>FGX</i> \$49.95
HyperMethod <i>HyperMethod</i> \$190 - \$390	HyperStudio <i>Knowledge Adventure</i> \$69.95 - \$199.95	Infochannel Designer <i>Scala</i> \$359
iShell 3 <i>Tribeworks</i> \$495	Liquid Media <i>SkunkLabs</i> \$200-\$140 (academic)	Magenta II <i>Magenta</i> \$149
MaxMedia <i>ML Software</i> \$50 - \$120	Media Make&Go <i>Parasys</i> \$149	Media Mixer <i>Alchemedia, Inc.</i> \$129
MediaPro <i>MediaPro</i> \$99	Mediator 7 Pro <i>Matchware</i> \$399	MetaCard <i>MetaCard Co.</i> \$995
MotionStudio 3 <i>Wisdom Software</i> \$39.95	MovieWorks Deluxe <i>Interactive Solutions</i> \$99.95	MP Express <i>Bytes of Learning</i> \$49.95
Multimedia Builder <i>Media Chance</i> \$60 - 45	Multimedia Fusion <i>ClickTeam</i> \$99	Multimedia Scrapbook <i>Alchemedia Inc.</i> \$89
Multimedia Suite \$649	Navarasa Multimedia 4 <i>Navarasa Multimedia</i> \$29.99	NeoBook <i>NeoSoft Co.</i> \$199.95

ODS Players <i>Optical Data Systems</i> \$229	Opus Pro <i>Digital Workshop</i> \$249.95	Ovation Studio Pro <i>R. I. Soft Systems</i> \$299
Platypus Multimedia Author <i>Platypus Software</i> \$228 - \$272	Powerpoint <i>Microsoft</i> \$229	Presentation Publisher <i>CMB Software</i> \$89.95
Presentation Wizard <i>Alchemy Mindworks</i> \$30	Revolution <i>Runtime Revolution</i> \$497.5	Shelldrake Developer <i>Shelldrake Technologies</i>
Slim Show <i>PC Whole Ware</i> \$49.95	SuperLink <i>Alchemedia Inc.</i> \$129	Tactic! <i>BGW</i>
Toolbook Instructor <i>Click2Learn</i> \$2599	Twin Player 3 <i>CD-ROM Studio</i> \$110	

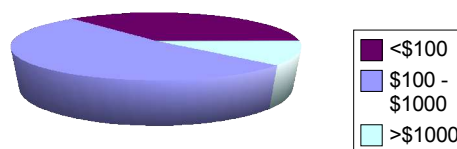
At this point, it has to be stated that all the gathered numbers may vary slightly, due to market changes and offers. Additionally, vague data was not processed at all which justifies the existence of lacunas in the table.

As one can see, prices vary from \$29.99 (Navarasa Multimedia 4 by Navarasa Multimedia) to \$2599 (Toolbook Instructor by Click2Learn). Whatsmore, some tools seem to offer themselves at two prices. In the majority of cases, this happens simply because of different target pricing by the companies. For example, certain software packages are offered to academic institutions at lower prices. The same applies to students, as well.

However, even if we categorize all packages based on their lowest price, Fig. 1 shows that,

in most cases, one needs to spend \$100 to \$1000 for a multimedia authoring tool. An amount that, usually, cannot always be spared by a teacher or parent.

**Package Prices**



*Fig. 1: Package prices*

In response to that, sometimes there are low-cost software offers that leave a certain percentage of functionality out of the whole deal, e.g. a cd / dvd burning utility that can be bought as a cd or dvd burner separately at a lower price. This may occur because the market is still immature for a product that has so many capabilities (such as the case described) or because of a certain cost that has to be shifted to the final buyer.

To this category falls the example of mp3 encoding. In order for a multimedia authoring tool to encompass the mp3 technology, some copyright issues have to be dealt with. As a result, Multimedia Builder (by Media Chance) costs \$60 with an mp3 licence and \$45 without.

Many questions arise from all the above: Where should the benefit standards be set when the cost is set to \$2600 for a multimedia authoring tool? Making the question clearer, what would an educator earn – by purchasing a costly program – in forms of classroom assistance? And, mainly, how much should the same teacher know regarding multimedia authoring or programming, in order to achieve a high benefit/cost factor for that tool?

### 3. Statistics

Data emerging from the study indicate that good multimedia authoring tools tend to be very expensive while low-cost programs often

come too specialized to act in an integrated manner, thus leading to the need for a different tool for every subject.

The diagrams below give a more complete overview of the situation that was evaluated. Let it be noted that everything is examined through the scope of functionality and convenience. Using this as a logical base, a complete multimedia authoring tool has to provide all the characteristics that an educator with no special IT skills would find useful e.g. supported sound, picture and video imports, elementary text editing, animation, export capabilities, etc.

Most of the times, multimedia authoring consists of the combination of images, sounds and videos. Therefore, it is essential for a multimedia tool to be able to import as many formats as possible.

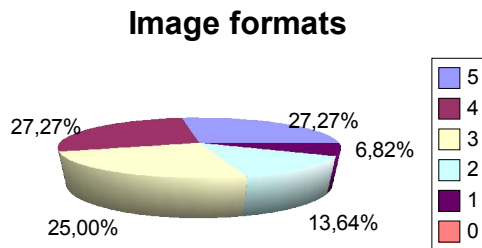


Fig. 2: Image formats

Knowing that the 0 to 5 scale is just a matter of subjective evaluation (where 0 reflects “inexistent” and 5 reflects “excellent”), one can deduce that most of the programs (Fig. 2) support an significant number of image importing (more than 7 possible file extensions, to be exact).

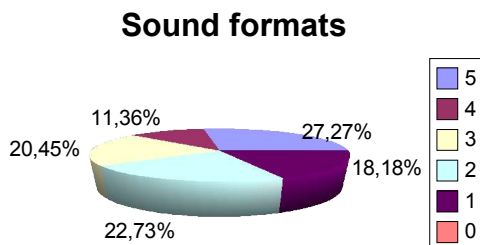


Fig. 3: Sound formats

As shown in Fig. 3, most programs have been graded highly when talking about sound imports. However, even if a percentage of 11% recognizes only 4 audio file extensions, this may mean nothing if these extensions incorporate common formats as mp3, wav, etc.

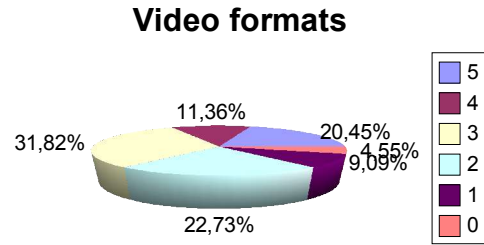


Fig. 4: Video formats

The sad percentage of 4,55% in Fig. 4 corresponds to Motion Studio 3 and Presentation Wizard that offer no video imports whatsoever. A fact that raises the question: “Who would buy a multimedia authoring tool that supports only images and sound?” Fortunately, 7 packages support between 4 and 8 different video file types which is more than efficient, most of the times.

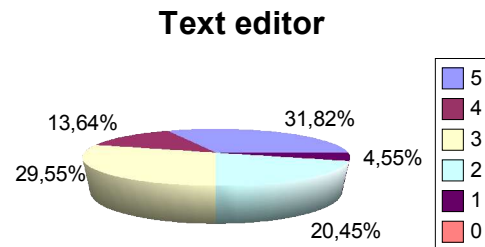


Fig. 5: Text editor

Fig. 5 betrays the negative example of two programs: Slim Show (that supports one – line – editing only) and CBT Master (Lessons) that does offers a text editor; nevertheless, no text importing is possible. Despite that, the majority supports text editing sufficiently.

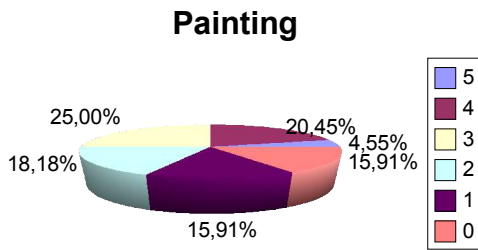


Fig. 6: Painting

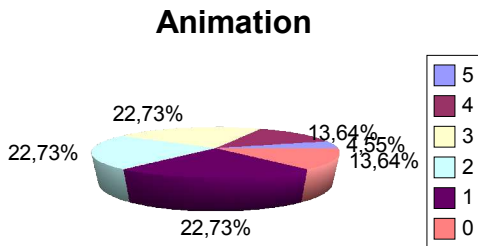


Fig. 7: Animation

A general view of the most important aspects of multimedia authoring is given in Fig. 6 and Fig. 7. It is most unfortunate that only Macromedia products (Flash and Director) have been rated as “Excellent” in Painting and Animating.

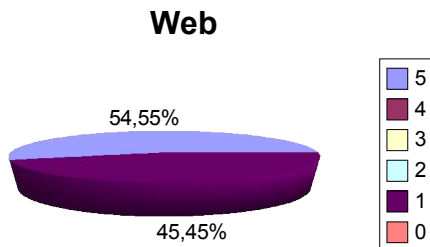


Fig. 8: Web

Regarding the web, in parallel with the latest evolutionary tactics in the www, some programs mutated themselves in order to be able to act as network platforms that allow users to communicate. This allows file projection or exchange between the two (or more) ends.

For example, what if a teacher needs a file that has probably already been composed by another teacher? One step further, what if there were some kind of database where a variety of educational files would be stored so that every

educator could choose the one that suits his / her needs? The situation in the field of multimedia authoring based on the market status can be seen on Fig. 8.

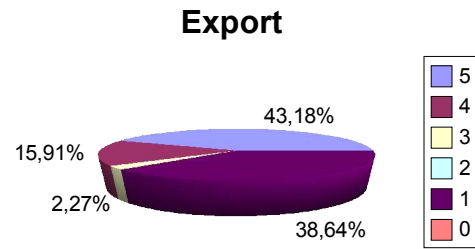


Fig. 9: Export

Last but not least, there is the issue of the export of executable files (Fig. 9). Composing a multimedia presentation and projecting it are two wholly different concepts: A multimedia presentation is constructed in order to be distributed to several computers and/or presented to an audience. If the file can be executed by itself, all you need is a computer. On the other hand, if the file needs the program in which it was created in order to be executed, then things get too complicated: These files can be interpreted only in computers that have that specific program installed.

Of course, there is an intermediate situation where you need the program to compose the file but you only need a smaller program (a “player”) in order to execute it (e.g. Macromedia Flash and Flash Player).

#### 4. Summary – Conclusions

Sadly enough, despite the detail in which the characteristics of every tool were gathered, it has to be reminded that only one sector has not been adequately covered: The educational one. And that is not due to lack of analysis but because no serious educational behaviour has been found to any of the programs examined.

And this is a real pity, given the fact that education is the primary field that could benefit from the use of multimedia computing; lessons, interactive courses, multimedia

tutorials and much more could be a small part of the material produced by educators. But, in order for that to be feasible, there has to be a way to produce every-day applications for class “consumption”. A tool that is:

- Easy enough for a person with no special computer skills. A multimedia authoring tool that can be dealt with in a single weekend without the need of books, tutorials, lessons.
- Cheap enough for anyone. Because it is only then that every educator that has spotted the need for a multimedia authoring tool will take up the opportunity and decide to invest money and time.

Therefore it is only natural that, from the above, derives the following question: Why is there no open source representative among the 44 programs examined here? Shouldn't there be an educational multimedia authoring tool free to use, distribute or even alter at will? For only in the open source community can a tool for this purpose be found: Cheap as it can be and open to anyone.

The inexistence of such a tool leaves an obvious gap in the educational field, even if a variety of needs can be covered by the existing commercial multimedia packages. And, by that, there is no implication that the existing

software is low-quality. On the contrary, commercially available tools have been designed and implemented aiming to a different audience [1]. However, they are found incapable to serve a purely *educational aim*.

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