

# Reasonable Influences: The Advantages and Obstacles encountered with Commercial Software Packages used in Introductory Undergraduate Electronic Music Courses.

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## Abstract

As commercial software Propellerhead's Reason has received considerable acclaim and enjoys increased success in the marketplace. It has been successfully implemented in diverse classroom environments at a variety of levels – in spite of this there remains, in some circles, a degree of resistance against Reason, perhaps due to its unabashedly commercial nature. In practice Reason provides a compact yet flexible pedagogical environment in which one can introduce fundamental electronic music concepts clearly and effectively to the novice electronic music student.

## 1 Introduction

Reason's virtual synth rack that has proved to be a great resource for introductory undergraduate electronic music courses geared toward both the music major and non-major alike. The software offers a wealth of virtual devices, including mixers, modules, and effect units, which can be connected and manipulated with ease. Modelled on physical hardware design concepts, Reason offers a familiar interface to those who have worked with the various devices' hardware equivalents in addition to MIDI-based sequencing capabilities for those versed in traditional music notation.

Reason retains the experimentation aspect of the original hardware interfaces, including the instant aural gratification achieved through the manipulation of pre-defined knobs and sliders. Herein lies the three main challenges with that arise when using the software in a pedagogical environment: First, for the novice electronic music student the interface adds a layer of complexity that could be bypassed by using other types of music software. Second, the experimentation phase of device discovery can be an important step in the learning curve however within Reason interaction between the user and the software often remains tactile rather than considered. Third, the software has been designed to easily produce music in a specific style. However the advantages

that Reason, as a compact pedagogical environment, provides far outweighs these potential disadvantages.

## 2 Compact Pedagogical Environment

Reason's virtual rack design concept allows for a number of valuable avenues of instruction, including the illustration of concepts relating to signal flow and the aural exploration of theories relating to synthesis.

### 2.1 Areas

Reason's reversible rack provides a clear demonstration of the key concepts related to signal flow, both in terms of audio and control signals. The routing process of the various 'hardware' devices facilitates discussion on the various uses of effects and mixers. While the devices themselves provide concise environments for instruction in basic synthesis theory. Combined use of the pattern and piano-roll sequencers allows for a variety of pitch interaction methods within the software while its general MIDI and Re-Wire capabilities expands the pedagogical implications as Reason can be easily combined with other software synthesizers and/or integrated into more sophisticated sequencers with full audio and MIDI capabilities.

### 2.2 Organization

A significant element of Reason's value in a pedagogical context is the ease with which one can move from the exploration of simple to complex concepts. In a course's lab component students can work from files created by the instructor that contain the components necessary to illustrate and explore the concepts being covered. Concepts relating to signal flow and synthesis can be examined simultaneously and the complexity of the material can be gradually increased through deeper exploration of specific modules or the addition of new modules into the rack.

## 2.3 Accessibility

Reason is particularly valuable in large introductory courses as students are able to explore prepared racks individually on a computer. In departments with limited resources and personnel Reason is a considerable improvement over the model where a large group of students crowd around a single rack of hardware devices.

The simplicity of the interface and its short learning curve makes Reason an appropriate choice for the first year student. The parallel design features among the sound producing modules provides a second level of accessibility as once the concepts, particularly those that are related to synthesis, are understood on one module they can be transferred and implemented on other modules.

The real value of Reason is observed once the students enter the later years of the electronic music program. Equipped with an understanding of the mixers, effects units, synthesizers, drum machines, samples, and the general concepts relating to the physical connection of these devices the students are able to enter a hardware studio with this understanding and implement it to achieve a reasonable level of proficiency with a relatively short learning curve.

## 3 Obstacles to Overcome

There are a number of obstacles that must be addressed when incorporating Reason into an academic electronic music curriculum. The first obstacle relates to the issues raised by Reason's 'hardware-inspired' design: while advantageous for the experienced hardware user this design model can cause undue confusion and inspire undesirable correlations between unrelated concepts in a novice. The most conspicuous example of this problem is the use of pots and faders as the primary methods of representation for various parameters, such as the representation of envelope values as a set of sliders, rather than taking advantage of the digital medium to explore more intuitive representations.<sup>1</sup> The student can easily become preoccupied with the relationship of controllers to one another over the exact implications of the manipulation of various controllers.

The second obstacle is closely linked to the first; the extensive use of knobs and sliders promotes an experimentation approach that can become habitual. Rather than requiring the student to have a working understanding of the underlying theory of a technique before being able to implement it Reason facilitates a

high-level interaction with sound where results may be achieved entirely through trial and error.

The third obstacle also stems from the interface but has aesthetic rather than practical or theoretical implications; the interface design is geared towards producing commercial electronic music. The pattern sequencers, drum machines, loop players, and available libraries of patches for all of the sound modules are designed with a commercial aesthetic in mind – the path of least resistance is the production of four on the floor dance beats.

It should be stressed that these are merely obstacles; while significant they are superficial and can be overcome with a considered implementation of Reason into the curriculum. Considered design of labs and assignments is key in encouraging an examination and implementation of the software at a deeper level.

## Conclusions

Reason has proved a valuable resource for the introduction and exploration of fundamental electronic music concepts. With careful consideration and implementation it can be used as the cornerstone of introductory electronic music courses. The most significant aspect of such an implementation is the high level of accessibility to hands-on experimentation and exploration that it allows each student. A secondary significant aspect is its flexibility; the instructor is able to systematically design and implement a progressive introductory electronic music curriculum. Effective use of the software requires a recognition and understanding of its commercial nature, as its pedagogical potential is partially masked by its beat-driven aesthetic.

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<sup>1</sup> Reason is moving in the direction of more sophisticated sound representation, demonstrated in the increased complexity of the graphical representations of some of the new effect devices available in version 2.5.