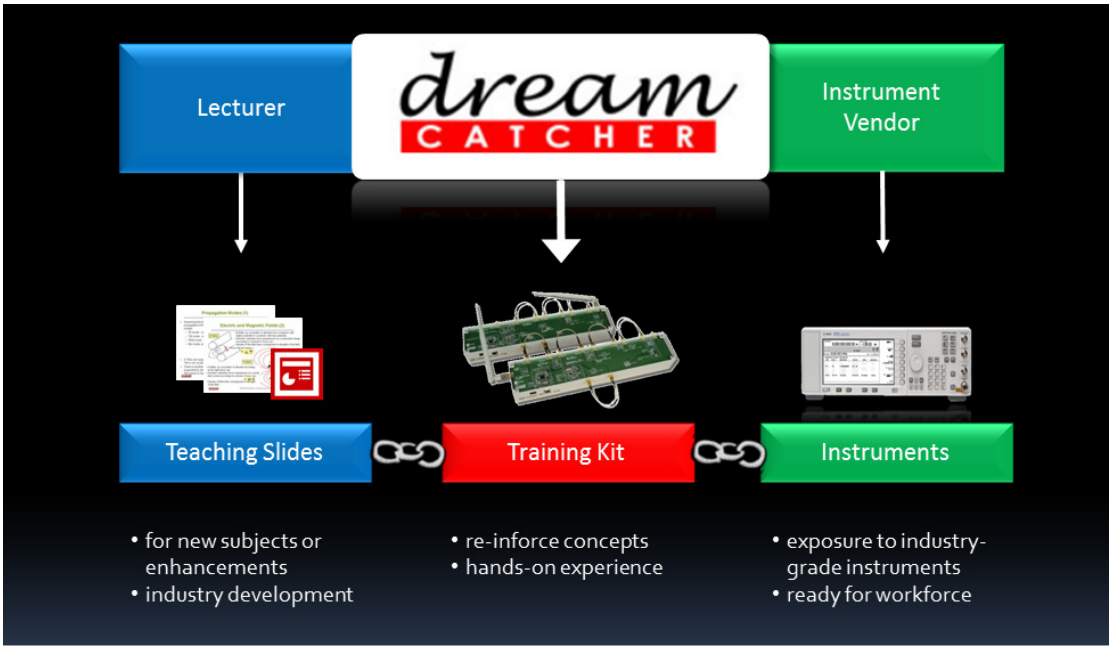
Kits Educacionais da DreamCatcher

A fig. 1 mostra os componentes e os objetivos dos kits educacionais desenvolvidos pela empresa DreamCatcher com sede na Malásia. A empresa, fundada por ex-integrantes da Agilent, foi criada para desenvolver kits que permitem atualizar a formação do engenheiro conforme a demanda tecnológica do mercado de trabalho. Compõe os kits: slides sobre as diferentes práticas de laboratório para facilitar a preparação de aula pelo docente, os roteiros de laboratório e os kits para ensino.

Fig. 1 – Conteúdo e objetivos dos kits educacionais



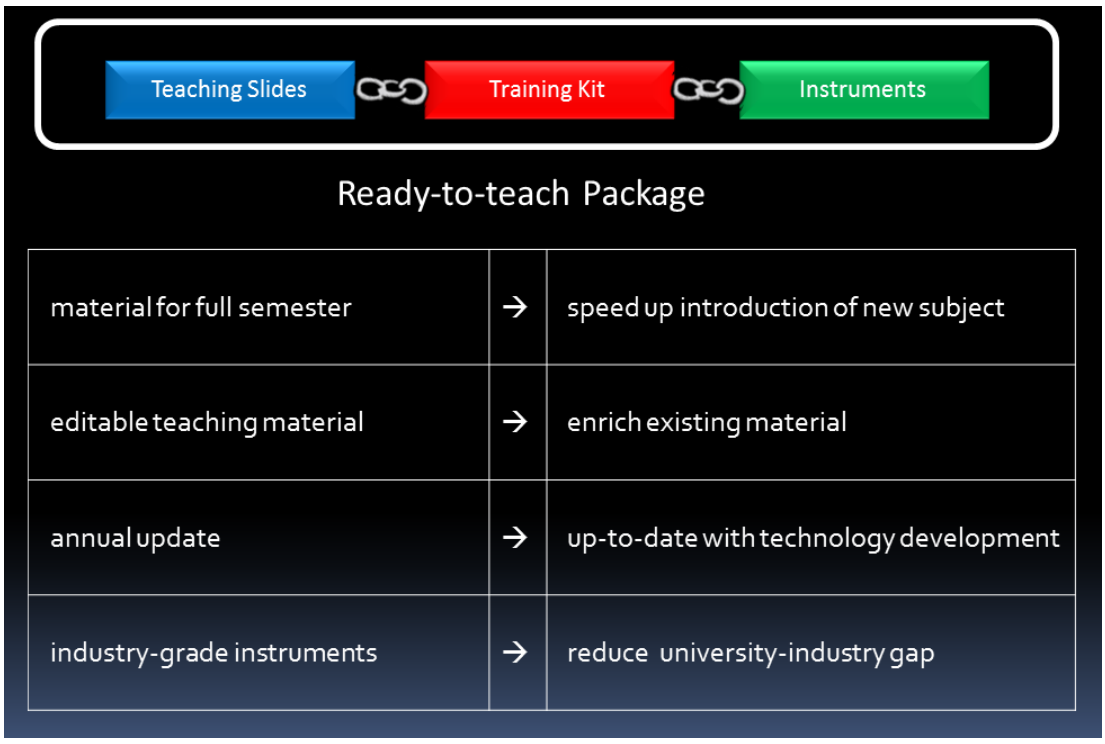


Fig. 1 (cont.) – Conteúdo e objetivos dos kits educacionais

Uma comparação entre kits educacionais e o conteúdo dos kits da DreamCatcher está descrito na figura 2 e na Tabela 1, respectivamente.

Fig. 2 – Comparação entre kits educacionais

	DreamCatcher Courseware	Typical Training Kit	Self-developed Solution
Teaching slides included?	Yes *(editable PowerPoint format)*	No	Yes
Lab sheets included?	Yes *(editable Word format)*	Yes	Yes
Developed for specific university subject?	Yes	No	Yes
Material good for one full semester?	Yes	No	Yes
Developed for use with industry-grade instruments?	Yes	Limited	Limited
Curriculum and material developed with technology partners?	Yes	Limited	Limited
Regular material updates?	Yes	No	Limited

Tabela 1 – Conteúdo dos kits educacionais

Kit Educacional	Conteúdo
General Electronics Laboratóries	
ME3000 - Analog Eletronics	Semiconductor fundamentals Analog electronic devices Analog circuit analysis Typical applications of electronic devices Measurement instruments usage
ME3100 - Analog Circuit Design	Analog circuit analysis Passive and active components BJT circuit analysis and design Practical op-amp design Active filter design Measurement instruments usage Measurement principles
ME3200 - Electronic Instrumentation and Measurement	End-to-end measurement system Introduction to measurement instruments Usage of instrument programming tools Usage of basic instruments
Digital & Embedded Systems	
ME2000 - Microcontroller System Design (8051)	Basic microprocessor and microcontroller technology 8051 microcontroller hardware architecture 8051 microcontroller operations Typical microcontroller applications Measurement instruments usage Software tools usage
ME2100 - Embedded System Design (ARM9)	ARM processor fundamentals ARM hardware architecture ARM instruction set and programming Typical ARM applications Mixed-signal oscilloscope usage GNU-based ARM toolchain software usage
ME2110 - Embedded System Design (Cortex-M3) (ME2110)	ARM processor fundamentals ARM hardware architecture ARM instruction set and programming Typical ARM applications Cortex-M3 development tools
ME2200 - Digital Systems (ME2200)	Digital logic fundamentals Digital logic design Digital building block design Verilog coding EDA tools usage Design verification RTL design I/O core design FPGA applications

Tabela 1 (cont.) – Conteúdo dos kits educacionais

ME2300 - Digital Signal Processing (ME2300)	Measurement instruments usage Time and frequency domain representations and signal analysis Z-transform and filtering concepts FIR and IIR digital filter designs Efficient FIR and IIR digital filter implementations FFT applications System-level designs of real-time signal processing systems Software-hardware co-simulation and verification The MathWorks™ MATLAB®, Simulink®, and Altera® DSP Builder usage Measurement instruments usage
RF Microwave & Wireless Communications	
ME1000 - RF Circuit Design	Basic RF concepts RF circuit design concepts RF communication system concepts RF circuit characterization RF Electronic Design Automation (EDA) software usage RF circuit simulation and construction RF measurement instruments usage Measurement automation
ME1010 - RF Circuit Design (Agilent Genesys)	Basic RF concepts RF circuit design RF communication system concepts RF circuit characterization RF Electronic Design Automation (EDA) software usage RF circuit simulation
ME1100 - Digital RF Communications	Digital communication fundamentals Digital modulation techniques Baseband and RF transceiver analysis Transceiver architectures Baseband generation software tools usage Measurement instruments usage
ME1300 - Antenna and Propagation (ME1300)	Antenna fundamentals Antenna parameters Antenna impedance matching techniques Practical antenna design Antenna measurement techniques Software tools usage Measurement instruments usage
ME1400 - EMI and EMC	Sources of Electromagnetic Interference EMC fundamentals Good PCB design practice EMC regulations and standards Compliance testing and measurements Measurement instruments usage

Os kits educacionais solicitados estão sendo utilizados em mais de 40 paises incluindo Asia (Australia, Hong Kong, India, Japan, Korea, Malaysia, Philippines, Singapore, Taiwan, Thailand, Vietnam), Africa e Oriente Médio (Egypt, Russia, South Africa, Syria, Turkey, UAE), Europa (Austria, Belgium, Czech, Denmark, Finland, France, Germany, Greece, Hungry, Italy, Lithuania, Netherland, Romania, Spain, Sweden, Switzerland e United Kingdom) e nas Américas (Brazil, Canada, Chile, Mexico, USA e Venezuela).