"If you cannot measure something, you cannot understand it... If you cannot control it, you cannot improve it."

~ James Harrington

The last 10 years have witnessed a huge buzz in the education industry with several startups and traditional publishers launching new technology tools and platforms for digital learning. A look into the budding education tools often shows smart computing devices, visual displays and flexible classrooms. However, the most promising of the lot is learning analytics and data collection. This is only obvious given that evidence and data based decision-making has been shown to produce improved results, productivity and output.

The Digital Footprint

"Teachers need to integrate technology seamlessly into the curriculum instead of viewing it as an add-on, an afterthought, or an event."

~ Heidi-Hayes Jacobs

Attending classroom lectures or studying from hardbound study materials might limit the level of individual attention given to each student, especially so, when feedback or data cannot be stored for ready reference and easy analysis. On the other hand, advancements in technology have given rise to online learning systems for students. This allows unambiguous storage of data and information.

Technology has facilitated digital footprints of many kinds. Social interaction, online learning, student cards, digital student records and every page read online leaves activity streams and data trails. In fact, there are standards emerging that track this data in a standard format. One such standard is the xAPI or Tin Can API.

Digital footprints, activity trails and general usage data produced by the learners help academicians analyze the learning process. This is one of the most crucial impacts of learning analytics, and it offers a personalized and engaging learning experience for students. New age platforms allow tracking a student's learning curve. They also have the ability to suggest ways and methods by which educational publishers and teachers can re-model the course. The data identifies under-performing students and potential drop outs. So, if a lag in performance is identified, it can be corrected sooner than in a traditional classroom. This means that additional support can be provided for such students to help increase their confidence, success and performance. Informed decisions and strategies can be used to ensure that a significant difference is made.

Why is Learning Analytics Needed?

"Online learning is not the next big thing, it is the now big thing."

~ Donna J. Abernathy

Educational analysis helps determine the appropriate learning materials that can be useful for different classes of learners. This is based on the learner's performance, personal interests and level of skill. There are other advantages linked to the use of such analytics in e-learning.

1. **Personalized Learning Experiences:** Both education technology companies and course designers now customize the educational experience for each and every individual. For instance, if the data collected shows a particular student is unable to finish a module or takes longer than expected, certain steps can be put in place to ensure that the learner is given appropriate learning material (videos, audios, etc) to better understand the module. As an alternative, the student can be given additional support through the course or perhaps a refresher course of the previous module. Students can be given links to websites that will allow them to understand the course material better. The e-learning experience understands that no two students are alike and this is especially the case with different ethnic backgrounds.

2. **Increased Retention Rates:** If a learner is not performing well during the course, they are less likely to remain enrolled. Due to lack of motivation, they may stop participating. Hence, the organization or institution will see an increase in the drop-out rate.

   Many e-learning courses have had a low rate of student retention. The learnings derived from the data analytics, can be used to perhaps 'gamify' the complete experience of the learner and increase engagement. This would mean increased pass-percent rates and lesser chances of drop-outs.

3. **Improved Future Courses:** Apart from current learners, it also helps mould more suitable programs for future learners. For example, if the data collected in relation to a particular module shows many students found certain aspects difficult to understand, the program developers can change the difficulty level or provide additional material. A considerable amount of time can be saved and a strong foundation put in place.

Growth Forward

The scope of learning analytics should not be limited only to shaping education programs and the process of learning. At the end of a course, students should leave with an in-depth understanding of the core subject and/or skills. This will help them continue the learning process throughout their lives. Learning analytics if used correctly can build stronger relations between data, learning and teaching, thereby maintaining an in-depth focus on developing the appropriate skills and knowledge.

This is what MagicBox endeavors to fulfill by offering a mobile platform for distributing smart content. Among the first to adopt the Tin Can API, MagicBox has been designed to use the 'log everything' approach using Tin Can API. MagicBox now offers a learning analytics module and learning record storage solutions. The learning analytics solutions offered include analytics for publishers, as well as administrators and teachers – the big differentiator towards building smarter platforms.

- Written by Harish Agrawal, Director - Product Development, Magic Software

About Magic Software: Magic, a K-12 EdTech major, provides consulting, platforms and tools, product design and development, and product testing solutions to publishers, technology companies and content providers. Its cloud-based mobile learning and distribution platform, MagicBox, and digital curriculum products developed for its customers, are used in schools in North America, UK, Europe, Australasia and Latin America.

Truly reinventing learning while bringing it to life!