One of the topics on many of our readers’ minds is education. They want to explore the benefits of an advanced degree for themselves or their employees. They want to know about the latest trends in MBAs and what is being studied. And they want to know what higher education institutions are doing to stand apart from the competition.

This special supplement to the Los Angeles Business Journal takes a look at some of the programs that contribute to taking local professionals to the next level of excellence, while we also dig into some of the trends affecting the education landscape and how schools are preparing professionals to withstand and overcome challenges and unforeseen circumstances such as the global pandemic and economic hurdles.
Dancing with Machines: Preparing Students for the Workforce of the Future

By CHANDRA SUBRAMANIAM, PH.D., and ROBERT J. SHERIDAN

A few years ago, a cohort of undergraduate students returned from two weeks of classroom study, company visits and cultural immersion in China. One student reported her biggest surprise:

“When we visited the factory, I expected the automation and the robots. What I didn’t anticipate was the complex ways that humans would be interacting with them. It was like watching a carefully choreographed dance between the machines and the people, being performed all over this massive facility.”

That insight offers an apt metaphor for the challenges we face at the David Nazarian College of Business and Economics at California State University, Northridge (CSUN) in preparing our students for the workplace of the future. We must teach them how to dance — with technological partners “trained” by artificial intelligence, to music written in the “key of data,” played on new-age instruments such as machine learning and the Internet of Things (IoT), orchestrated through robotic process automation (RPA), to accompany intricate ballets for every corporate purpose, both strategic and tactical.

That student who was surprised by factory choreography in Guangzhou would be startled at what RPA is doing to transform the very nature of back-office and customer-facing operations.

RPA provides systems with the authority to perform discretionary decision-making in an operational process. Within defined parameters, RPA empowers machines to “decide and execute,” at a specific point in time, without any direct human agency. Effecting such authority requires troves of data, powerful and precise analytics, and indeed — the rich experience of human talent to define the decision-making task and to build the solution.

RPA has advanced to the point where operational decision making can be automated for almost any repetitive process for which historical data is available, including those thought to be the sole province of human judgement. Big and emerging companies alike have developed products with expansive capabilities for a broad array of business applications. These platforms have become extraordinarily sophisticated over the past five years — not the least for the increasing ease of their use.

Frontline employees use built-in tools for “task mining” — testing the data sufficiency, viability and the ROI of specific automation opportunities. These same employees can “record” the task, design a process path toward the decision point, and test it — all with point-and-click-driven automation.

RPA platforms can automate internal applications as basic as Microsoft Office Suite, or as complex as legacy networks of cloud-based tools with API interoperability. Some of the more sophisticated platforms are now integrating smart contracts, enabled by blockchain.

For those frontline workers, the dance has become less rigidly choreographed. They’ve changed partners from application-based systems to task-driven ones. Large companies have distributed these tools widely and encouraged experimentation.

The service divisions of the giant accounting firms and consultants of every size have made RPA a mainstay of their practices — internally as well as for client engagement.

The extent to which work has been automated, rather than displaced, is illustrated by one RPA vendor’s pitch to prospective clients, a “personal assistant bot for every employee.” These would display dashboards, track metrics, log performance, and send alerts, triggers and queuing status so that the frontline workers can monitor the automated, low-error decision making in progress.

It’s a beautiful thing — except when it isn’t. It’s never fun to watch a dancer collapse on stage in full view of an audience, and the recent debacle of Zillow’s “flipping” business is ample testament to what happens when the dance of algorithms and human talent goes unrehearsed and out of sync.

And that’s where the Nazarian College at CSUN comes into play. Four years ago, as the realities of digital transformation and its implications for the workforce of the future became apparent, we decided upon a very specific and focused strategy — “Data First.”

We’ve reflected that by introducing two new degree programs, both a BS and an MS in Business Analytics. We situated these new programs within our Department of Systems and Operations Management, and moved all of our Information Systems faculty and programs into this same alignment. We beefed up our engagement in the SAP Alliance, incorporating the firm’s outstanding content into specific courses so that our students earn academic credit and validate professional credentials simultaneously.

At the same time we’ve reinvigorated our commitment to learning and career preparation objectives that emphasize critical thinking, teamwork, effective communication and ethical frameworks. We’ve invested heavily in classroom technology and faculty development to deliver hybrid excellence, while still insisting on the centrality of in-person pedagogy and engagement as the best approach for preparing human depth in a technological world.

We’ve also deployed some powerful RPA of our own. In fact, the website for our Career Education and Professional Development Center is powered by a dynamic engine that curates and targets opportunities and resources to our students based on major, career interest, developmental objective, and personal preferences. In effect, it’s a mass personalization bot.

It is extraordinarily gratifying to see our students graduate ready to dance on day-one of their careers, and to know that employers are inviting them to the party.

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Francisco C. Rodriguez, Ph.D.
Chancellor
Los Angeles Community College District
Executive Education Program Market Continues to Grow

A study on the executive education program market by FMI provides insights into the drivers and opportunities augmenting the growth trajectory of the market through 2031.

According to FMI, online learning is projected to emerge as the most preferred mode of learning, exhibiting sales growth at a CAGR of 13.7% through 2031. Increasing adoption of online courses by employers and managers due to convenience is an attributive favoring the segment growth.

Just How Large is the Ed-Tech Market?

The U.S. K-12 sector spent $35.8 billion in 2020 on all things EdTech, including hardware, major software, digital curriculum resources and networks, a healthy increase of $7.5 billion over 2019. This spike was largely due to the CARES Act and essential capital spending on EdTech to enable remote learning, especially in institutions that had to scramble to issue computing devices, software and urgent training for teachers and students. One computer manufacturer privately shared with the Learning Counsel that they sold over 18 million machines into U.S. schools in under three months. Many schools and districts in the survey cited difficulties getting orders filled due to the surge in demand. Hardware sales, inclusive of most networking products, stood at $16.6 billion, up by $4.5 billion over 2019. Major software systems sales were $6.1 billion, up by $900 million over 2019.

Digital curriculum spend in 2020 was $13.1 billion, an increase of $2.1 billion over 2019. Paper resources spent by $1 billion to $6.9 billion in 2020 (This spend does not include staffing). Digital curriculum spend includes digital textbooks, educationalApps, curriculum subscription sites, digital lesson plans, online video subscriptions, online news or library subscriptions, eLearning curriculum also known as adaptive digital curriculum, courseware, digital testing or assessment products and services, and any other digital learning content materials except major systems.

In 2020, the average district spent $4.4 million on digital curriculum resources, with a $154,000 spend per student. Additional expenditure from school budgets is equivalent to $210,000 per school and $87.50 per student. Schools in the survey listed many of their digital learning resources, which commonly cost between $2 - $7 per student per year. The Learning Counsel survey also reviewed the straight-to-consumer digital curriculum spending arena, which is estimated at $22.8 billion, easily $9.7 billion greater than all schools and district spending combined. LeLanis Cauthen, CEO of the Learning Counsel noted, "Parents went on a shopping spree for digital learning during quarantine, increasing spend on the consumer-side of learning resources by over $1 billion in under 6 months. Prior to the pandemic, consumer growth had slowed, but is now roaring ahead once again at 25 percent, year over year."

Other metrics from the survey – out of 32,827 school and district participating respondents:
- 87 percent of schools and districts now issue individual students a personal computing device.
- 58 percent expect purchase of devices to increase
- 23 percent expect purchase of devices to remain the same
- 75 percent expect purchase of digital curriculum to increase, up from 70% in 2019
- 34 percent cite achieving a 100 percent full coverage model of core curriculum (main subjects of math, language, science, social studies/history) with digital resources
- 33 percent are considering purchase of eSports related equipment and software
- 13 percent are considering live tutoring services
- 39 percent cite that 80-100 percent of teachers now use digital curriculum
- 23 percent cite that 60-80 percent of teachers now use digital curriculum
- 18 percent cite that 40-60 percent of teachers now use digital curriculum
- The largest portion of respondents, 39.3 percent, cited that they have a ratio of 30 percent free versus 50 percent paid digital learning resources
- The largest portion of respondents, 34.55 percent, cited that the use of digital curriculum and content comprises 50-75 percent of the school day
- From 2019 to 2020, the percentage of teachers spending 4-10 hours a week just searching around for digital lesson plan materials increased from 32 percent to 65 percent.
- While zero percent of respondents answered that teachers were spending above 10 hours a week just searching around for digital lesson plan materials in 2019, in 2020 it was 7 percent of teachers.
- From 2019 to 2020, the percentage of teachers spending 4-10 hours a week building their own digital learning content increased from 22 percent to 47 percent.
- The top type of professional development offered for teachers was tied at 86 percent of respondents citing these two types: 11 device training and 21 digital communications (Google, Microsoft, other communications & video conferencing apps.) Third at 84 percent was training on teaching practice and academic standards.
- An obvious weakness during the pandemic is the fact that most schools still rely on learning as 62 percent or more whole-group oriented rather than personalized work-flow learning, core academics centered, small group learning, supplemental screen learning or project-based learning. Synchrony learning is still the predominant mode.
- 29 percent of schools and districts still have decentralized planning for all digital resources, meaning the teacher does all the selection and sequencing of content or app for lessons.
- 53 percent of schools and districts issue academic pacing guides in a non-automated way (some with minimal digital content references), and schools and teachers do decentralize lesson planning against those.
- 29 percent of schools and districts have centralized their plans with all digital resources and lessons by subject and by grade. These are mostly the all-online schools.
- Similar to every other year of this survey, in its 7th year, tight budgets were cited as the number one pressure point by 47 percent. The second highest pressure points were social and emotional needs of students and too much testing – tied at 41 percent.
- Teacher shortages were cited as the highest pressure point by 25 percent.
- Interestingly, 19 percent cited that “overall disequilibrium” was a major point of pressure.
- Both administrators and teachers cite “using data to enhance teaching” as the number one way they characterize digital transformation. Second for teachers was using interactive whiteboards and/or video conferencing technologies. Second for administrators was creating reports and analytics.

Learn more at thelearningcounsel.com.
Harnessing the Principles of Motivation in Education

Basic principles of motivation exist that are applicable to learning in any education situation

By MATTHEW WELLER

1. The environment can be used to focus the student's attention on what needs to be learned. Teachers who create warm and accepting yet business-like atmospheres will promote persistent effort and favorable attitudes toward learning. This strategy will be successful in children and in adults. Interesting visual aids, or concrete rewards. Some individuals – particularly children of certain ages and some adults – have little capacity for internal motivation and must be guided and reinforced constantly. The use of incentives is based on the principle that learning occurs more effectively when the student experiences feelings of satisfaction. Caution should be exercised in using external rewards when they are not absolutely necessary. Their use may be followed by a decline in internal motivation.

2. Incentives motivate learning. Incentives include privileges and receiving praise from the instructor. The instructor determines an incentive that is likely to motivate an individual at a particular time. In a general learning situation, self-motivation without rewards will not succeed. Students must find satisfaction in learning based on the understanding that the goals are useful to them or, less commonly, based on the pure enjoyment of exploring new things.

3. Internal motivation is longer lasting and more self-directive than is external motivation, which must be repeatedly reinforced by praise or concrete rewards. Some individuals – particularly children of certain ages and some adults – have little capacity for internal motivation and must be guided and reinforced constantly. The use of incentives is based on the principle that learning occurs more effectively when the student experiences feelings of satisfaction. Caution should be exercised in using external rewards when they are not absolutely necessary. Their use may be followed by a decline in internal motivation.

4. Learning is most effective when an individual is ready to learn, that is, when one wants to know something. Sometimes the student's readiness to learn comes with time, and the instructor's role is to encourage its development. If a desired change in behavior is urgent, the instructor may need to supervise directly to ensure that the desired behavior occurs. If a student is not ready to learn, he or she may not be reliable in following instructions and therefore must be supervised and have the instructions repeated again and again.

5. Motivation is enhanced by the way in which the instructional material is organized. In general, the best organized material makes the information meaningful to the individual. One method of organization includes relating new tasks to those already known. Other ways to relay meaning are to determine whether the person being taught understands the final outcome desired and instruct them to compare and contrast ideas.

None of the techniques will produce sustained motivation unless the goals are realistic for the learner. The basic learning principle involved is that success is more predictable motivating than is failure. Ordinarily, people will choose activities of intermediate uncertainty rather than those that are difficult (little likelihood of success) or easy (high probability of success). For goals of high value there is less tendency to choose more difficult conditions. Having learners assist in defining goals increases the probability that they will understand them and want to reach them. However, students sometimes have unrealistic notions about what they can accomplish. Possibly they do not understand the precision with which a skill must be carried out or have the depth of knowledge to master some material. To identify realistic goals, instructors must be skilled in assessing a student's readiness or a student's progress toward goals.

1. Because learning requires changed beliefs and behavior, it normally produces a mild level of anxiety. This is useful in motivating the individual. However, severe anxiety is incapacitating. A high degree of stress is inherent in some educational situations. If anxiety is severe, the individual's perception of what is going on around him or her is limited. Instructors must be able to identify anxiety and understand its effect on learning. They also have a responsibility to avoid causing severe anxiety in learners by setting ambiguous or unrealistically high goals for them.

2. It is important to help each student set goals and to provide informative feedback regarding progress toward the goals. Setting a goal demonstrates an intention to achieve and activates learning from one day to the next. It also directs the student's activities toward the goal and offers an opportunity to experience success.

3. Both affiliation and approval are strong motivators. People seek others with whom to compare their abilities, opinions, and emotions. Affiliation can also result in direct anxiety reduction by the social acceptance and the mere presence of others. However, these motivators can also lead to conformity, competition, and other behaviors that may seem as negative.

4. Many behaviors result from a combination of motives. It is recognized that no grand theory of motivation exists. However, motivation is so necessary for learning that strategies should be planned to organize a continuous and interactive motivational dynamic for maximum effectiveness. The general principles of motivation are interrelated. A single teaching action can use many of them simultaneously.

Finally, it should be said that an enormous gap exists between knowing that learning must be motivated and identifying the specific motivational components of any particular act. Instructors must focus on learning patterns of motivation for an individual or group, with the realization that errors will be common.

Matthew Weller is a freelance writer.