

Bluenotes EMEA 2017

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HIGHER EDUCATION TRANSFORMATION:
ROLE OF TECHNOLOGY IN ENHANCING
QUALITY

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SESSION DESCRIPTION

- Higher Education is undergoing many changes and radical transformations under the combined influence of two key factors: technological advances and labor market changes. This presentation will provide an overview of uses, roles, and domains of technology for quality enhancement in higher education in general and at American University of Beirut, in particular. Specific emphasis will be on tools used for enhancing both teaching and institutional effectiveness, based on experience and insights gained through the use of Blue. Finally based on this state of flux, an attempt will be made to predict how universities will look like in the future.

OUTLINE

- Introduction: Higher Education Context and Challenges
- Roles, uses, and domains of ICT in Higher Education.
- Use of ICT in Quality Enhancement at AUB
 - **Monitoring & evaluation**
 - Testing & assessment
 - Automating processes
 - Communication & collaboration
 - Library Management System
 - Learning Management System
- University of the Future
- Conclusion



HIGHER EDUCATION CONTEXT

Higher education ecosystem is in great flux, evolving at an increasingly rapid pace, and influenced by

- changing demographics,
- global competition,
- political volatility,
- diminished public funding,
- greater private involvement,
- growing accountability demands,
- alternative delivery modes, and
- game-changing technologies

HIGHER EDUCATION ISSUES CHALLENGES

- Increased expansion, putting pressure on
 - Quality
 - Financing
- Aligning offerings with outcomes expectations of graduates, society, and the labor market
- Distance provision of education
- Internationalization
- Governance arrangements
- Role of general education

INFORMATION TECHNOLOGY

- ICTs are vital to supporting the delivery of educational, research, and administrative services of higher education institutions in an efficient, reliable, and affordable way, as they support the full academic lifecycle,
 - learning and teaching, from initial student enquiries through to accreditation and graduation, the student journey.
 - research from initial bid writing through to project delivery and dissemination
- In a changing global context, ICT acts as catalyst for change and ICT-integrated pedagogy can transform educational theory and practice.

ICT DOMAINS AND USES

ICT systems raise quality, efficiency, and accessibility of teaching & learning.

Include six main areas:

- Payroll and financial accounting,
- Administration of student data,
- Procurement and Inventory management,
- Personnel records maintenance,
- Library systems, and
- Learning management systems

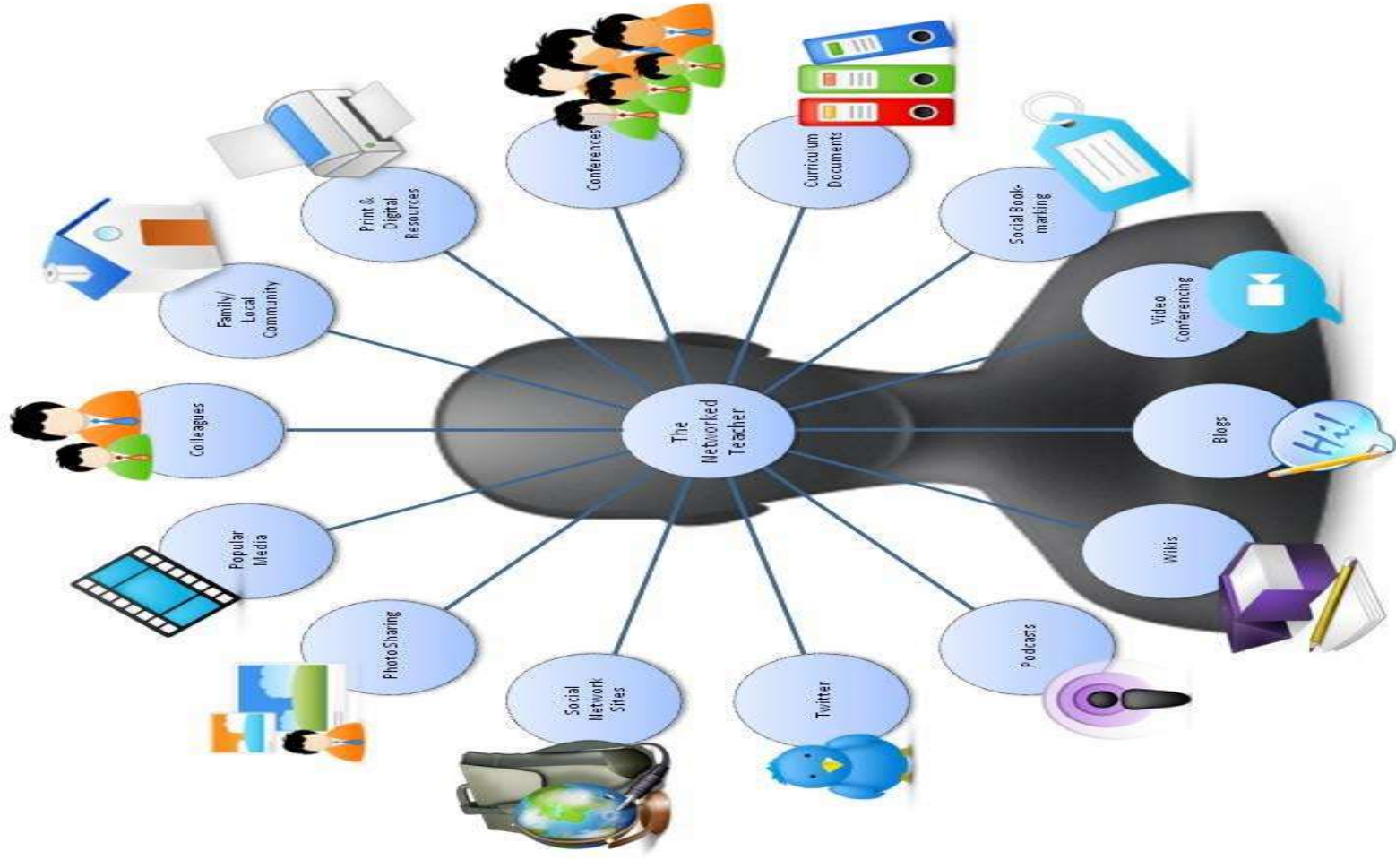
□ **Informative tool:** Provides vast amount of data in various formats such as audio, video, & documents.

□ **Situating tool:** Creates situations, which the student experiences in real life. Thus, simulation and virtual reality are possible.

□ **Constructive tool:** Manipulate the data and generate analysis.

□ **Communicative tool:** Used to remove communication barriers such as that of space and time.

ICT AS A TOOL



QUALITY ENHANCEMENT AND QUALITY ASSURANCE

- Quality assurance and quality enhancement can be seen as parts of a larger process of quality management:
 - assurance being concerned with determining that objectives and aims of establishments have been achieved, while
 - enhancement is concerned with making improvements
- Need for a structure that brings both together.
- A shift towards enhancement and transformative role of ICTs

ICT USE AT AUB TO ENHANCE QUALITY

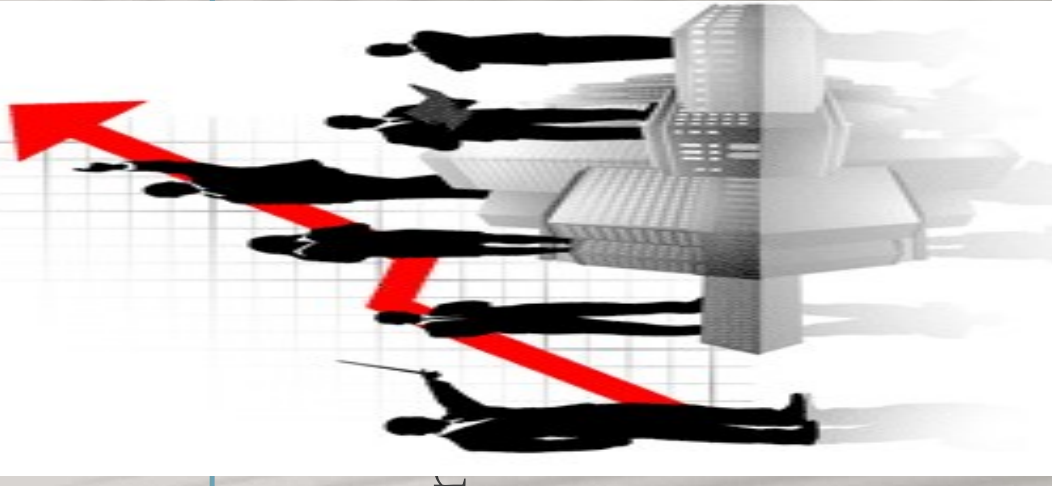
USE OF ICT IN QUALITY ENHANCEMENT AT AUB

- **Monitoring & evaluation**
- Testing & student assessment
- Automating processes
- Communication & Collaboration
- Library Management System
- Learning Management System

MONITORING & EVALUATION

As part of enhancing institutional effectiveness

- Move to **online electronic surveys** to assess student faculty, and staff experience, and various processes:
 - Registration, Advising, Engagement, Exit
 - Student support services
 - Alumni
 - Faculty and staff
- Use of **Blue Survey** in student elections.
- Participating in regional and international benchmarking studies.
- Use of **business intelligence** and learning analytics to develop data marts and dashboards to aid in decision making.
- Looking forward to start using **Blue Faculty Dashboard** in spring.



ASSESSMENT OF TEACHING EFFECTIVENESS USING BLUE

For the past three years, had a very positive experience:

- System is very user friendly in development, administration and reporting
 - Secure
 - Ease of access
 - Integration & synchronization
- Involved all stakeholders in development of item bank and different forms.
- Went in steps in its implementation and use.
- Caters to different kinds of course types: lecture, seminar, lab, workshop, large lecture, discussion, etc.
- Have excellent response rate (90-92%) because of a 3-week grade hold.

ASSESSMENT OF TEACHING EFFECTIVENESS USING BLUE

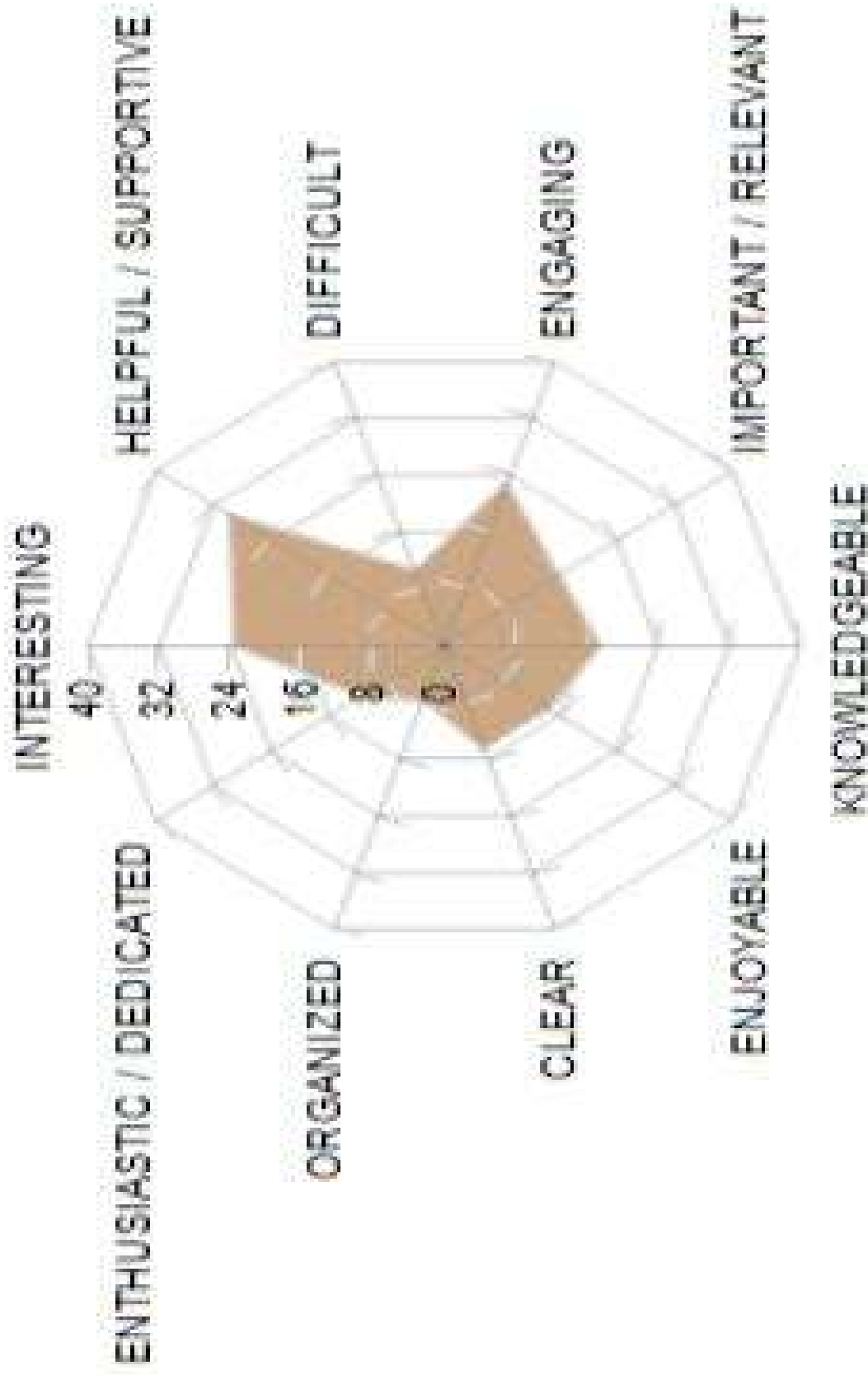
- Initially, we had same start and end dates for all courses, then had to meet requests for different start and end dates.
- This was first done manually with the help of Blue Support, now we have acquired DIG and this facilitates conducting this step electronically.
- Introduced QPs two years ago and faculty are very happy to add their own questions.
- There were issues and challenges but with the help of Support, were all resolved.

BLUE REPORTING

- Comprehensive reporting is done using Blue reports and we have added some extra statistics like percentile rank.
- Reporting is done for every faculty member by section and overall, and is compared to category of courses, faculty and to university.
- Faculty members have access to their reports, in addition to the chair, and the dean.
- For students, results are reported in the aggregate by department and by section.
- We have started using [Text Analytics](#) in the last two years, and reported comments either using radar chart or cloud.
- Last summer we worked with Blue Support to develop 3-year [summary trend reports](#), and these were very helpful for evaluation of promotion and tenure applications.

SAMPLE ANALYTIC REPORT: INSTRUCTOR STRENGTHS

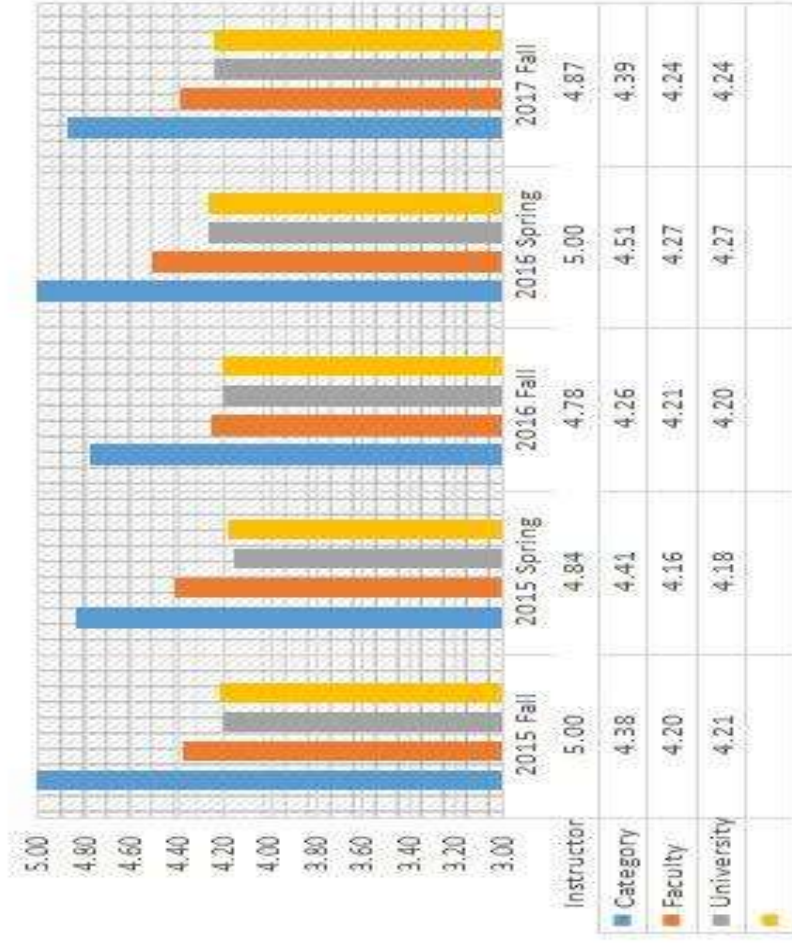
Excellent



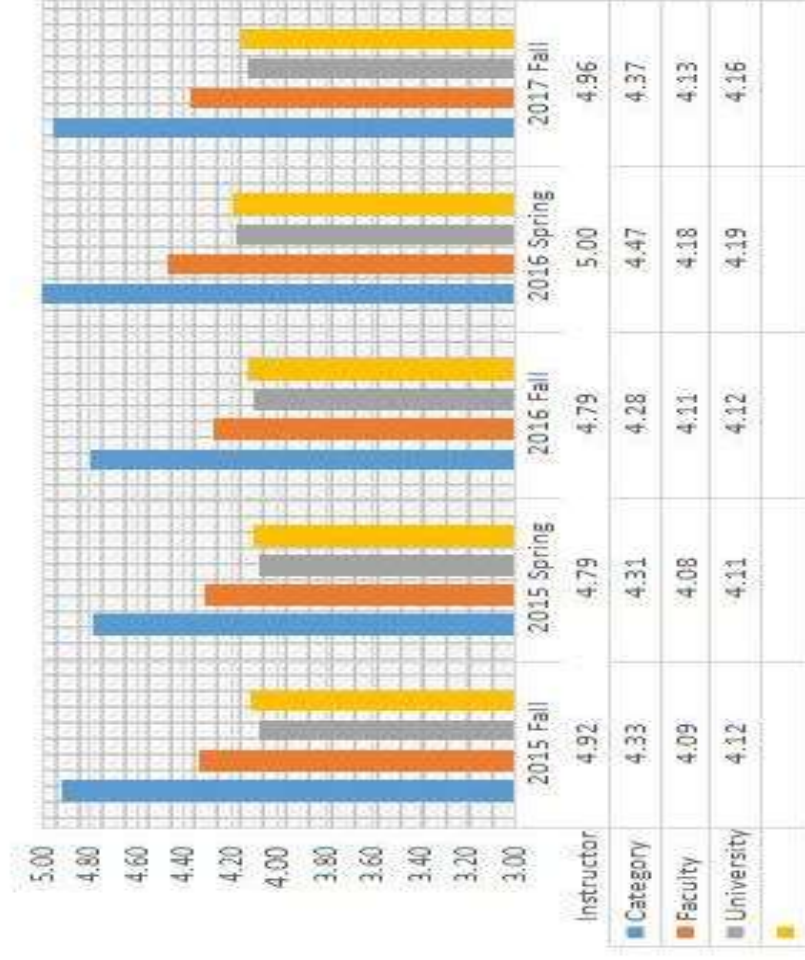
FIVE SEMESTER TREND: SECTION A

FIVE SEMESTER TREND: OVERALL

Section A



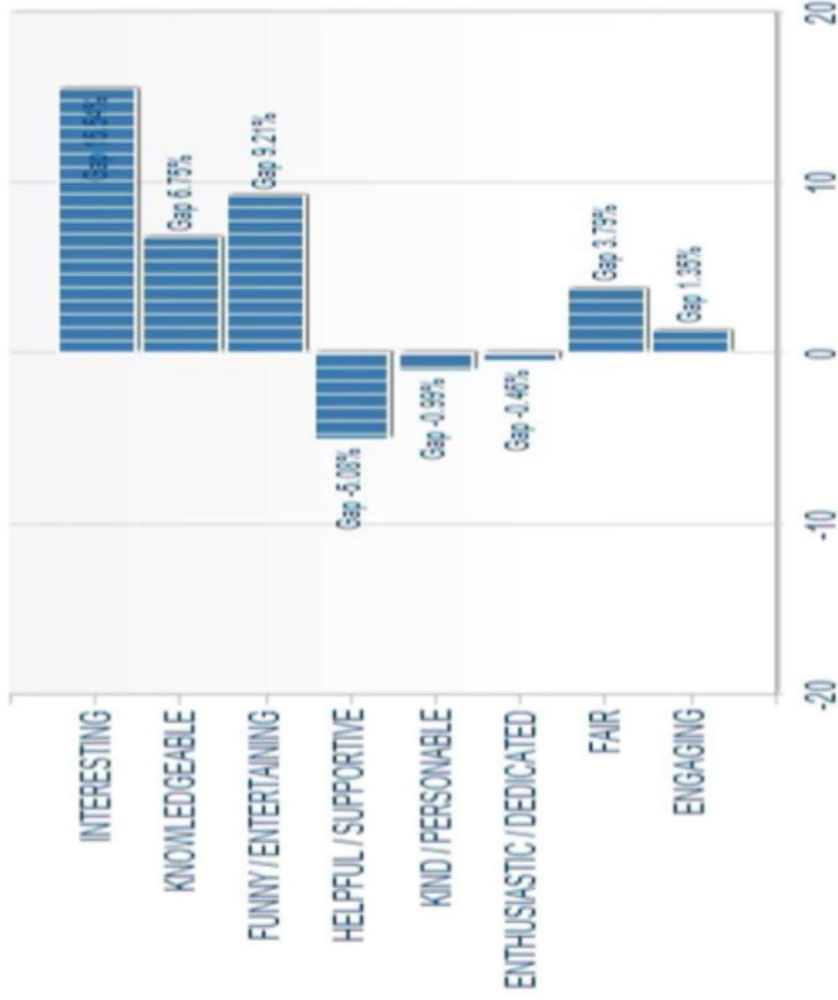
Overall



TREND ANALYSIS

TREND ANALYSIS: COMMENTS

Identify Instructor's strengths.



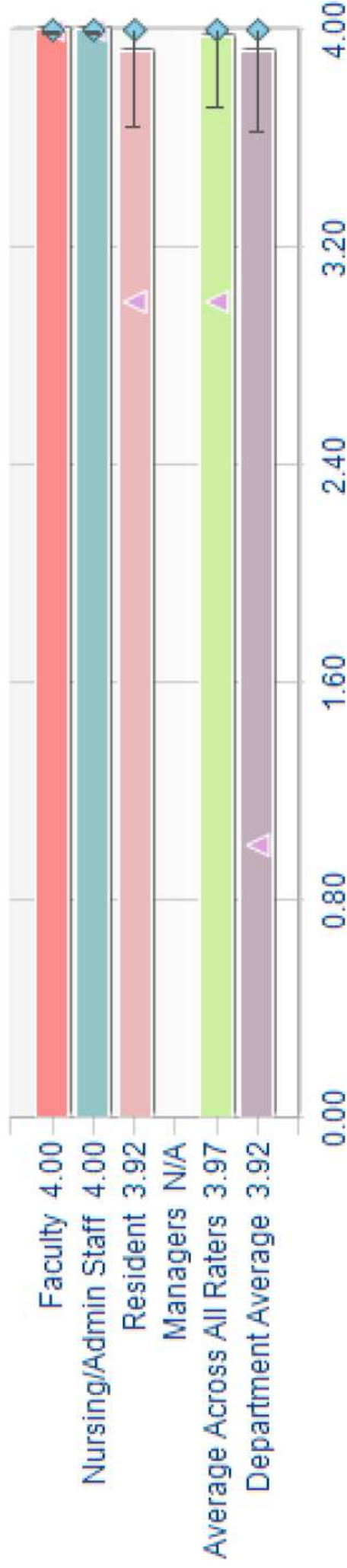
Attributes [No. of comments]	Instructor [79]	University [1886]	Gap
INTERESTING	29.11 %	13.57 %	15.54 %
KNOWLEDGEABLE	27.85 %	21.10 %	6.75 %
FUNNY / ENTERTAINING	12.66 %	3.45 %	9.21 %
HELPFUL / SUPPORTIVE	7.59 %	12.67 %	-5.08 %
KIND / PERSONABLE	6.33 %	7.32 %	-0.99 %
ENTHUSIASTIC / DEDICATED	6.33 %	6.79 %	-0.46 %
FAIR	5.06 %	1.27 %	3.79 %
ENGAGING	5.06 %	3.71 %	1.35 %

USE OF BLUE FOR PERFORMANCE MEASUREMENT

- For the past two years have started using blue 360 degree performance evaluation to measure employee/faculty performance.
- First started with faculty of medicine (FM), first on a pilot basis with one department, then for the whole faculty.
- A form was developed based on competencies required by the standards.
- Each medical doctor had to be evaluated by
 - Chair
 - Administrative staff working with him/her
 - Residents
 - Self-evaluation
- Reports compared evaluations from different perspectives by department and the faculty as a whole.
- 360 will be used with other departments and for evaluation of chairs.

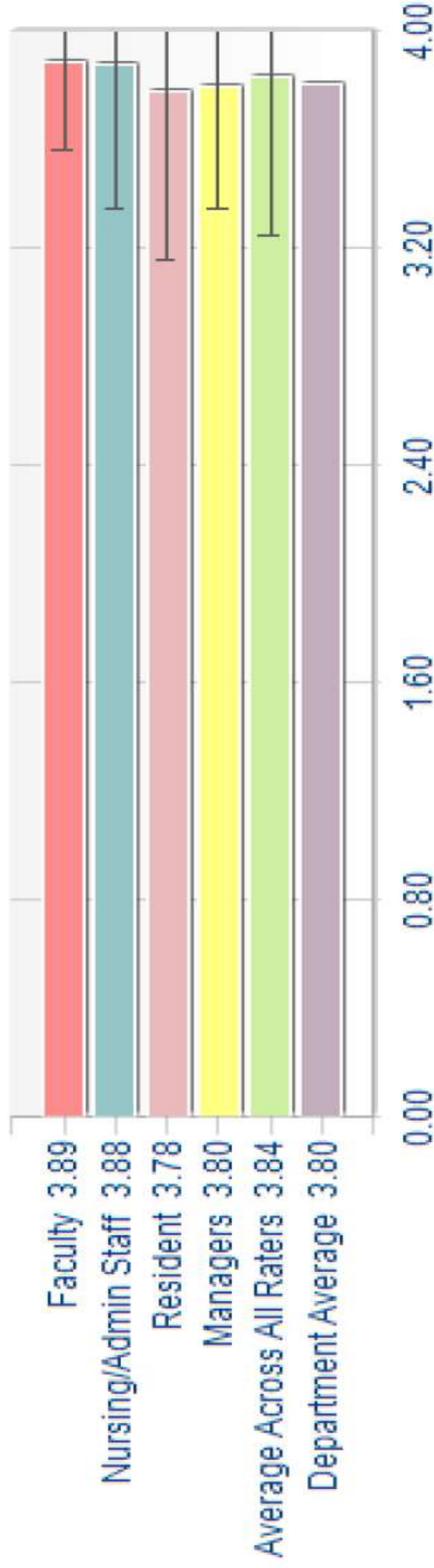
SAMPLE 360 REPORT

1. Listens to patients and their families' concerns and responds to them thoroughly.

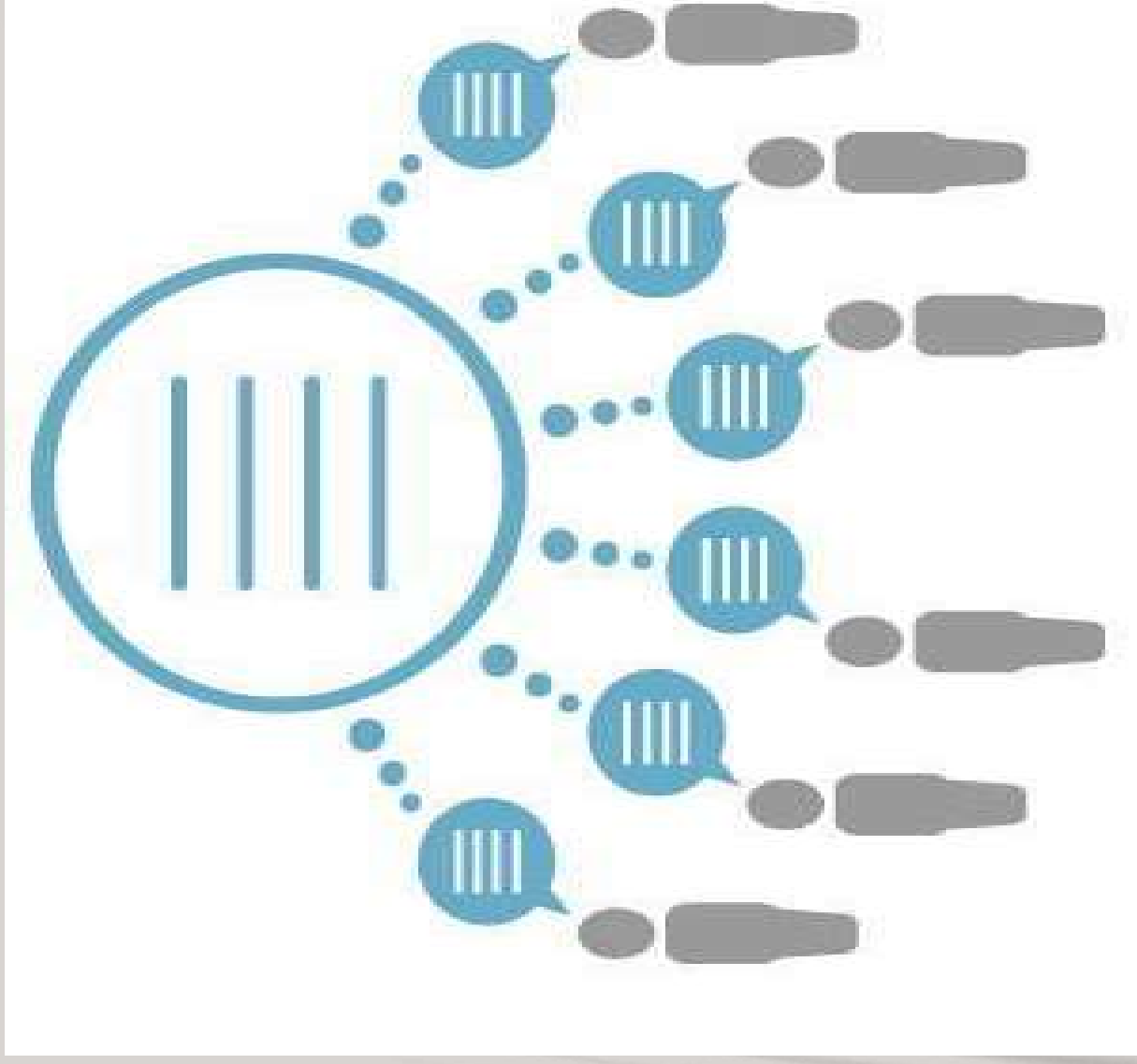


Average of all questions taken together

▲ Min ◆ Max | StandardDev



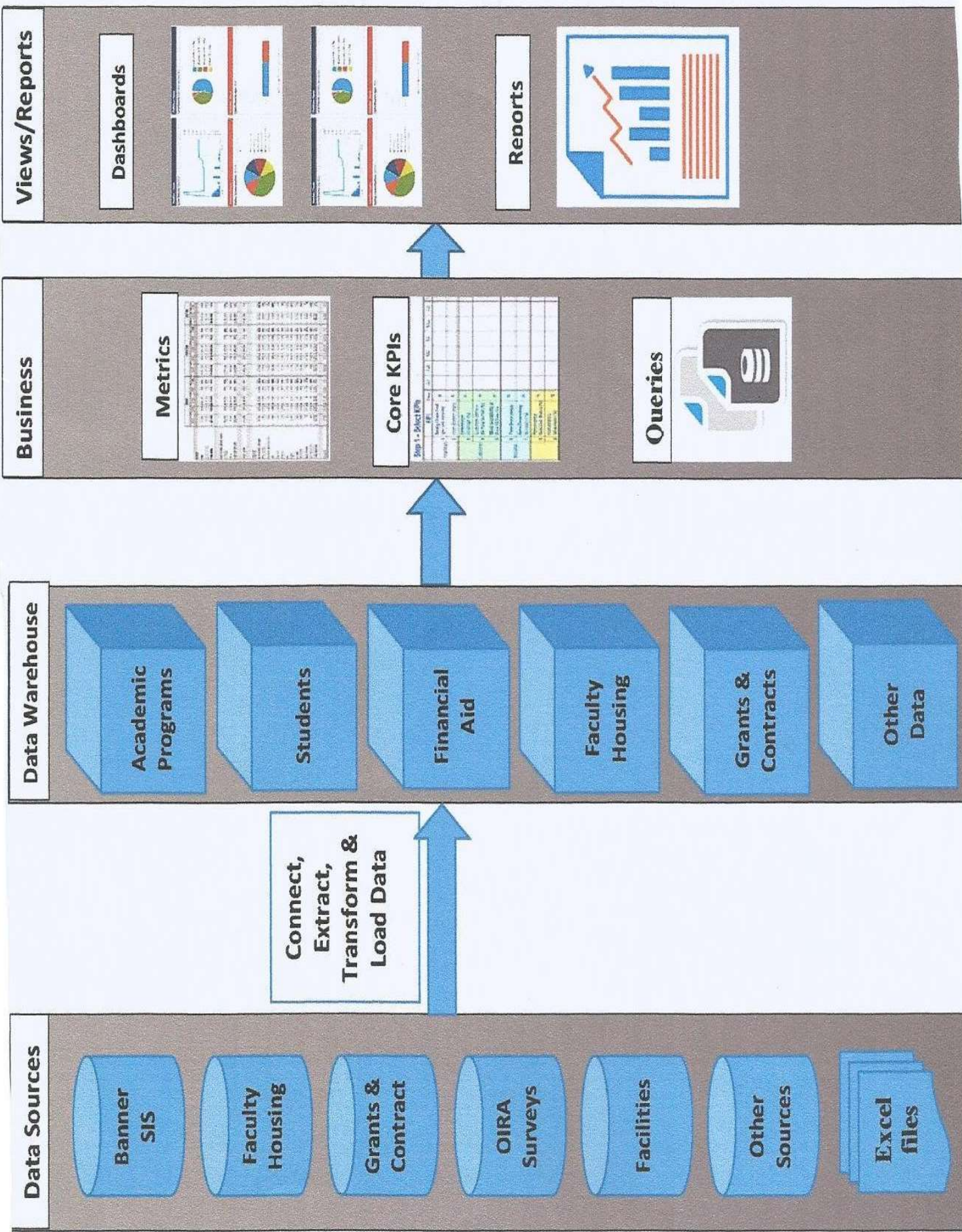
The Academic Assessment Unit (AAU) developed with the support of the Office of Information Technology (IT) a *Data Mart* that captures in real-time selected institutional data from disparate sources into a *single repository* or ‘warehouse’ of reliable information for user analysis and *decision-making*



AUB'S DATA MART PROJECT

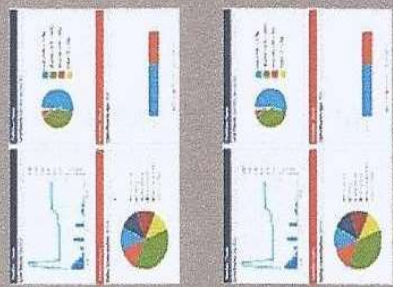


- **Specifically the Data Mart:**
- Consolidates real-time, accurate data from multiple AUB databases.
- Eliminates data inconsistency with standardized definitions.
- Serves as the unified, designated source for institutional quantitative data.
- Presents current and historical data since 2000 in graphic and numerical formats facilitating comparative and trend analyses.
- Calculates and provides visuals for metrics for Key Performance Indicators (KPIs) of the institutional academic strategic plan.
- Allows efficient generation of reports, summary tables, and spreadsheets.
- Features filters that can be applied to select specific data.



Views/Reports

Dashboards



Reports



Business

Metrics



Core KPIs



Queries



Data Warehouse

Academic Programs

Students

Financial Aid

Faculty Housing

Grants & Contracts

Other Data

Data Sources

Banner SIS

Faculty Housing

Grants & Contract

OIRA Surveys

Facilities

Other Sources

Excel files

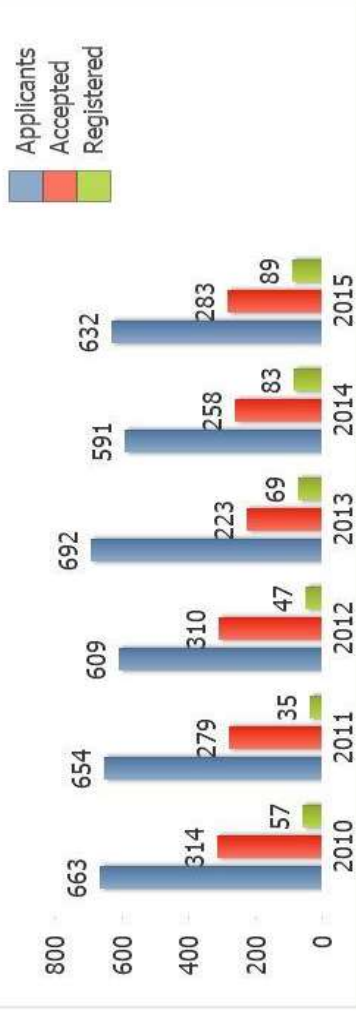
Students Admissions

Admissions Data

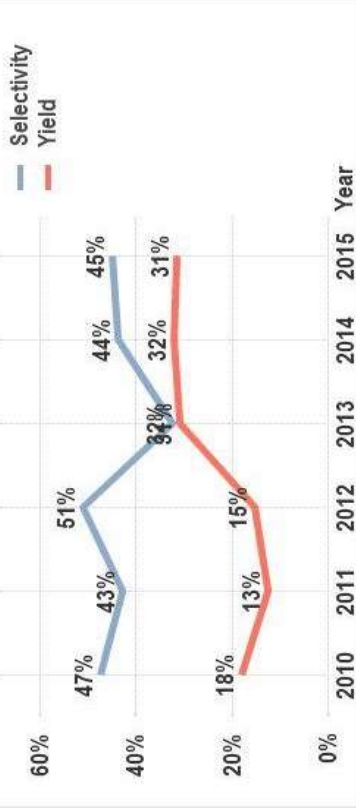
Filter By:

- Faculty > Arts & Sciences
- Major > Computer Science
- Student Level > Undergraduate
- Admission Type > Sophomore

Admissions By Faculty, Major and Level



Selectivity - Yield % by Faculty, Major and Level

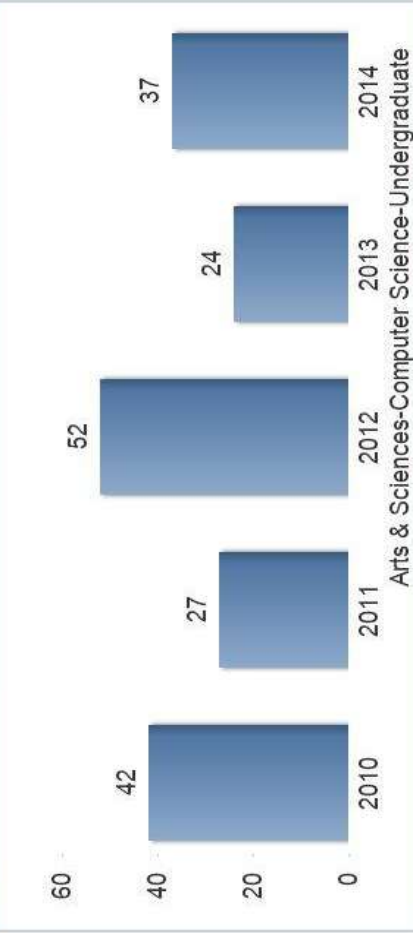


Graduation Rates and Degrees Awarded

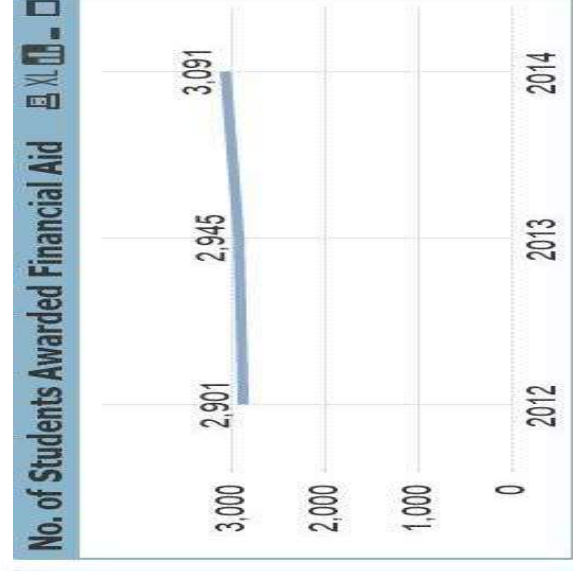
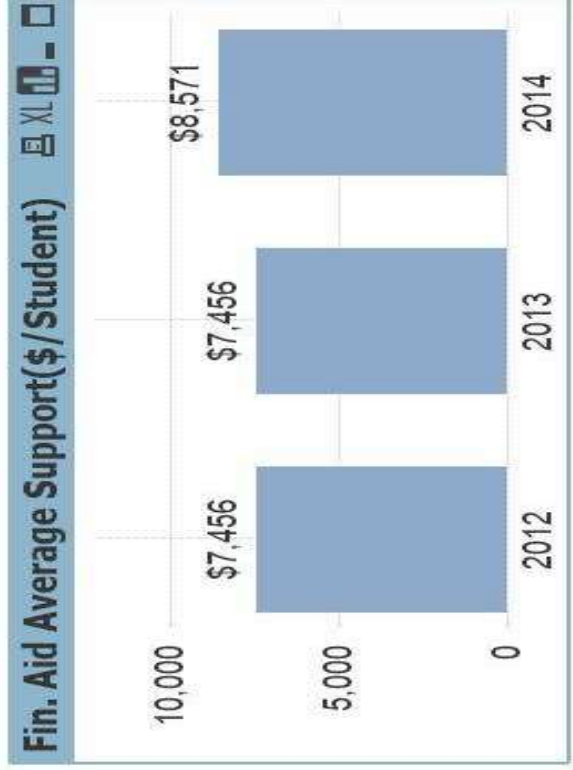
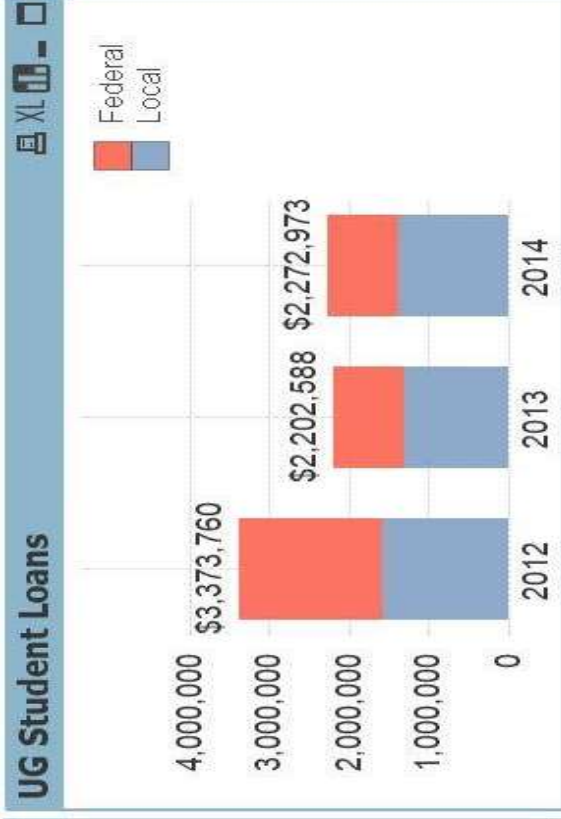
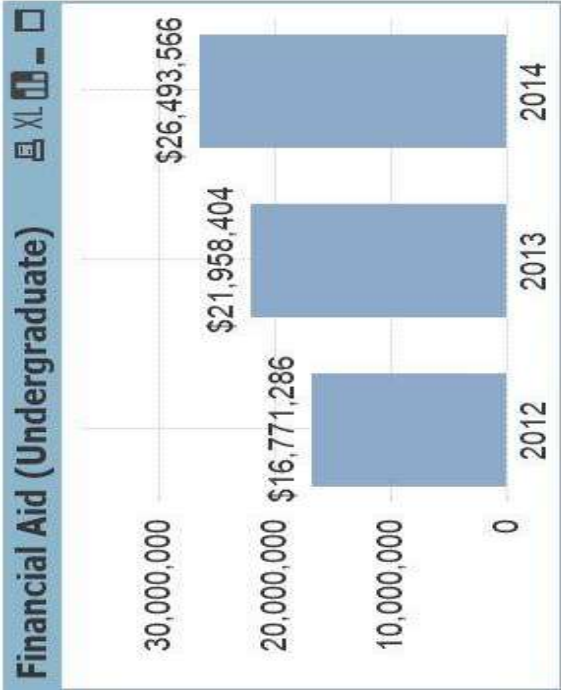
UG Graduation and Retention Rates



Degrees Awarded



Financial Aid Awards



ADMISSION TESTING

- ❑ Computerized item banks
- ❑ Item analyses
- ❑ Computer scoring
- ❑ Online registration
- ❑ New item types

STUDENT ASSESSMENT

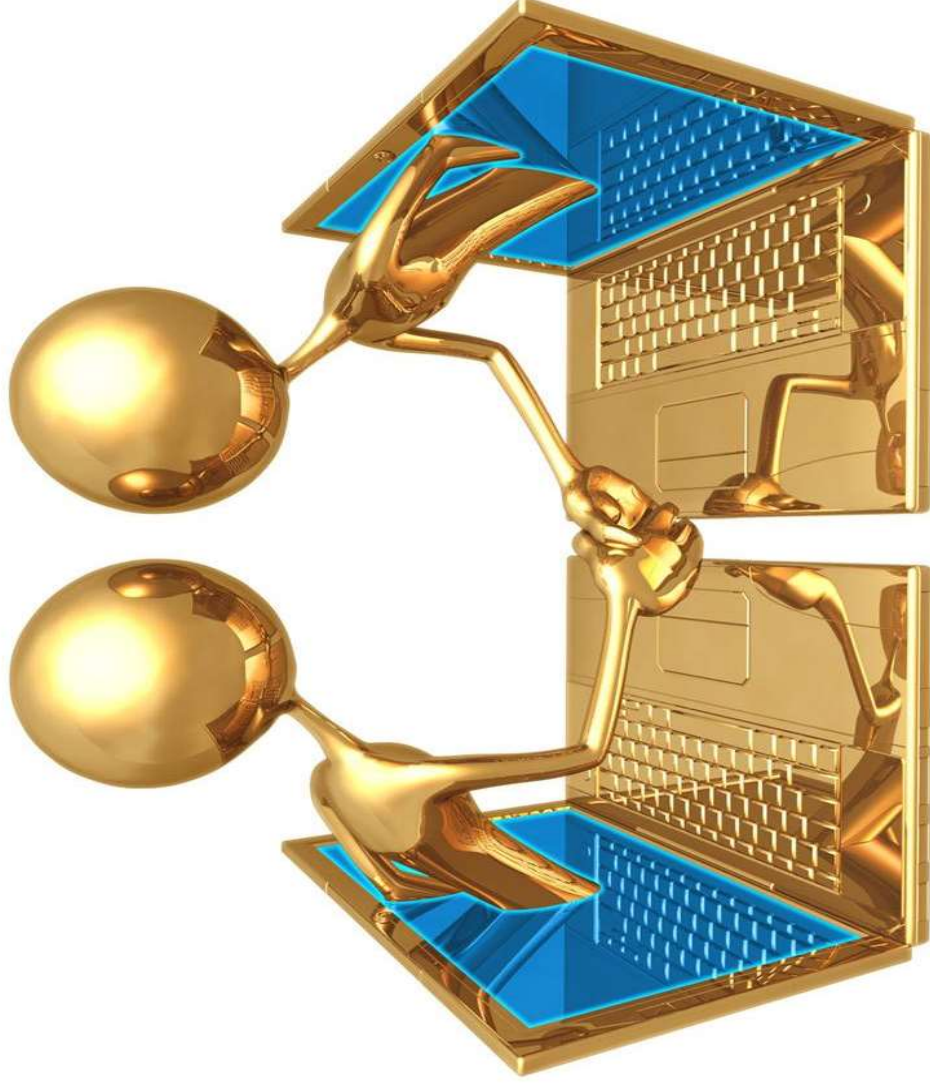
- ❑ Computer-based in some courses
- ❑ Use of LMS (Moodle)
- ❑ Electronic portfolios
- ❑ Clickers to obtain immediate feedback
- ❑ Computer scoring of essays
- ❑ Simulations

AUTOMATING PROCESSES

- ❑ Adopting state-of-the-art Enterprise Resource Planning (ERP) systems:
 - Student Information System (Banner system, by Ellucian) for the purpose of administering and maintaining student academic records
 - Oracle eBusiness Suite application for the purpose of automating our Financial, Human Resources and Procurement processes
- ❑ Automating most students centric academic business processes, by adopting the following system solutions:
 - eLearning System (Moodle) for facilitating Teaching and Learning activities for both Instructors and their students
 - Allowing for automated meeting scheduling as well as room and class reservation facility using Microsoft Calendar tool.

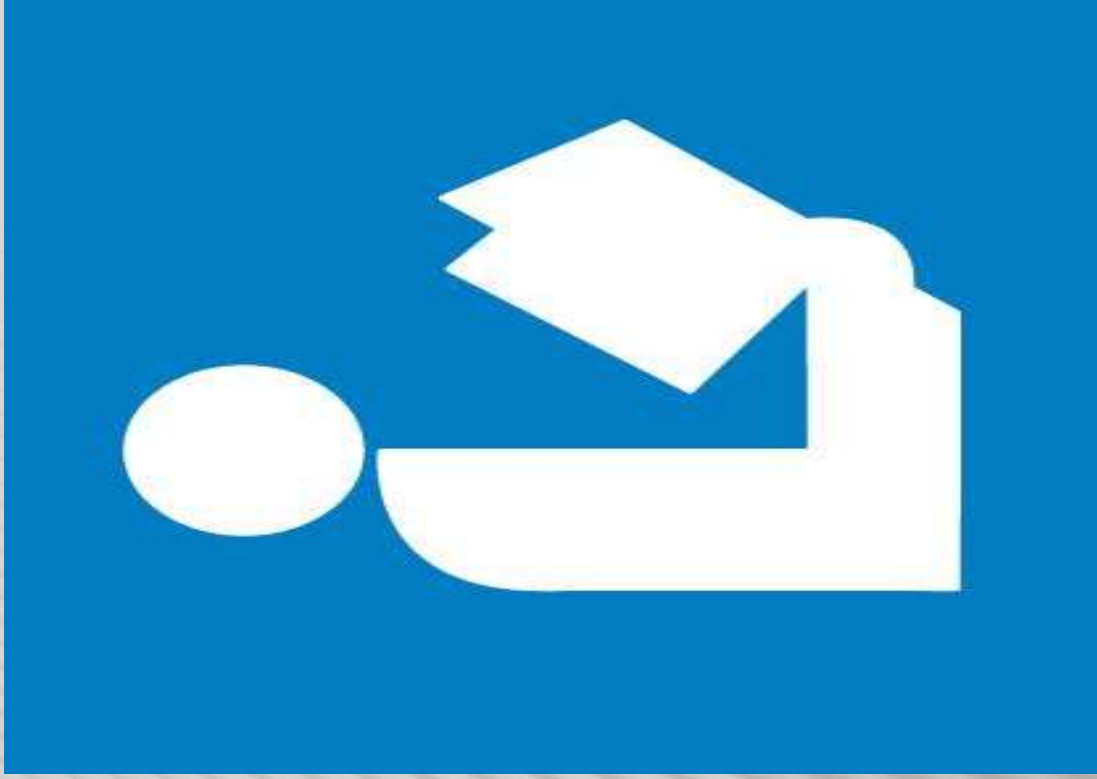
□ Providing latest technology in the collaboration and shared data storage tools, using Microsoft and Google products

□ Providing a mobile app for students (and faculty), which allows them to check holds, grades, schedule, academic calendar, as well as program offerings, and to facilitate search for library books and articles as well as access to e-learning (Moodle), ICE and to the latest News and Events



- Providing excellent data (email, social media, etc.) and audio/video (PBX, Skype, etc.) communication services, an extended email quota capacity for both students and faculty, as well as extended email usage for alumni.
- Allocating sufficient computer labs and study rooms for students, which are equipped with state-of-the-art workstations, internet access and printing facilities.





- ❑ The UL adopted a powerful integrated library system (Millennium) to manage operations and improve user services.
- ❑ This system contains five major modules and a number of other components:
 - Acquisitions and accounting,
 - serials processing,
 - electronic resource management, cataloging, circulation,
 - management information and reporting, media management, metadata builder, and online public access catalogue (OPAC).
- ❑ In addition, the UL use commercial and open source applications and systems to provide better access and retrieval of the digital collections (DSpace, OMEKA, Drupal, XTF, etc.):

LIBRARY MANAGEMENT SYSTEM

LEARNING MANAGEMENT SYSTEM

- ❑ Over 85% of courses at AUB use Moodle, our official Learning Management System, for web-enhanced course delivery.
- ❑ Moodle is used in 92 course sections being delivered in a Blended format

- ❑ Assist faculty members in the creation of interactive lectures using Articulate Storyline and creation of learning objects for their courses.



LEARNING MANAGEMENT SYSTEM: OTHER PROJECTS

Projects

- ❑ ProGreen Online Diploma in joint collaboration with AUC and LAU
 - 52 online courses
 - All courses use interactive lecturing
 - Moodle as an LMS
- ❑ Media and Information Literacy MOOC in collaboration with UNESCO
 - 10 online modules in Arabic
 - Interactive Lecturing using Articulate Storyline
 - Online quizzes
 - Forum discussions
 - Online certificates and attestations issued automatically from the LMS
- ❑ Continuing Education Certificates Online
 - CEC certificates are being redesigned to be offered completely online
 - 54 courses online by the 2021

Faculty Development Program

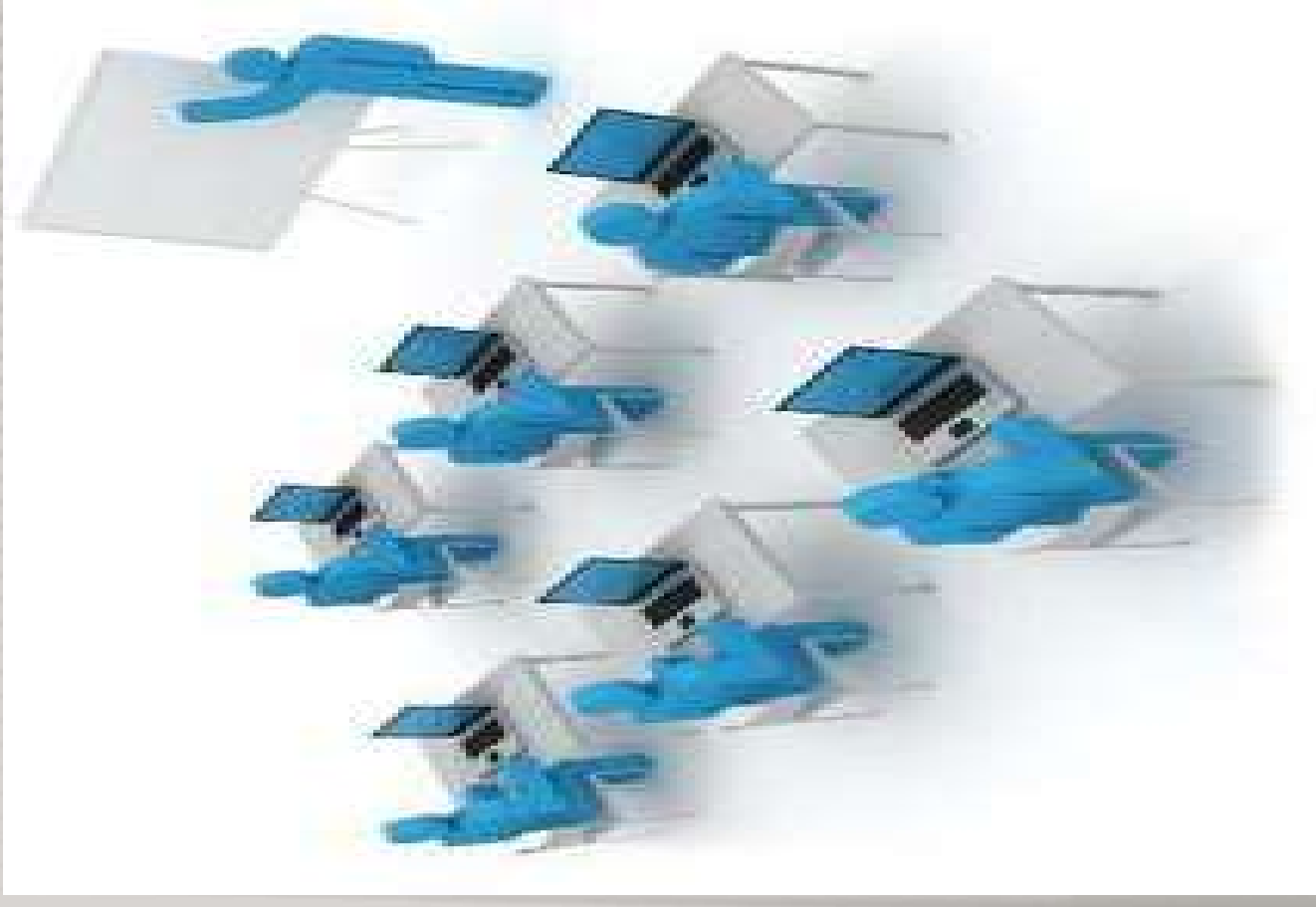
- ❑ Training on Blended Course Redesign
- ❑ Training on Collaborative Reflection
 - Wordpress
 - Padlet
 - Creativity Course
- ❑ Training on Data Visualization
 - Piktochart
 - Moodily
- ❑ Interactive/ Attractive Lecturing
 - Kahoot
 - Ed-Puzzle
 - Emaze
 - Articulate Storyline

A Transformed learning Experience

UNIVERSITY OF THE FUTURE

UNIVERSITY OF THE FUTURE

Teaching and learning will look very differently by the year 2030. We can imagine universities without majors, without academic departments, without lecture halls, and without tenure. We can imagine a professor giving a course to more than 300,000 students at the same time, online. We can imagine a robot teaching small groups of students... We can imagine students learning from each other without direct teacher involvement... Or we can imagine a student learning on her/his own, guided by an educational software based on artificial intelligence...Jamil Salmi (2018)

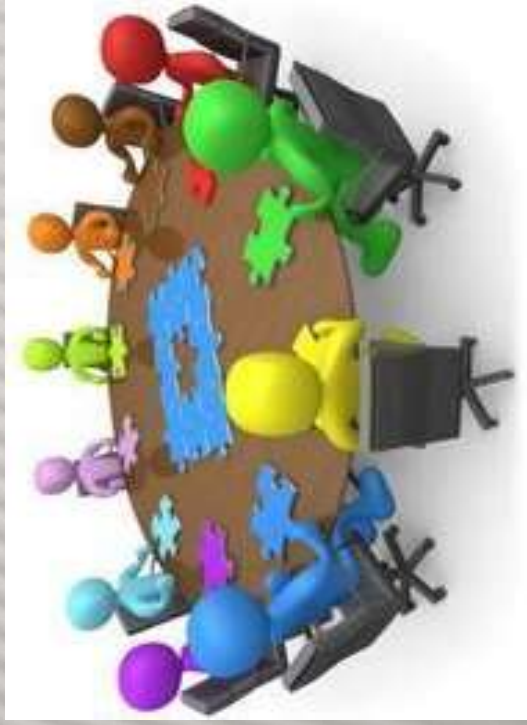


UNIVERSITY OF THE FUTURE

- Widespread progress in education technology, machine learning and data analytics is opening new avenues **for interactive and design-based learning.**
- Online platforms, simulation robots, gaming-like software, virtual reality, open digital resources, customized digital learning playlists, embedded assessment, micro-credentialing, learner profiles, and virtual mentoring, among others, will **radically transform the learning experience.**
- Tertiary education institutions are faced with the challenge of preparing young people for **jobs that do not exist yet.**
- The traditional approach where teachers impart their knowledge to students in the classroom is being replaced by a dynamic learning model where students acquire **generic competencies and socio-emotional skills** that prepare them to identify their own learning needs and advance their professional capacity by acquiring new knowledge and skills throughout their career in a **lifelong learning mode**

Source: adapted from Salmi, 2013

Thank you



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