Extending the Flipped Classroom Approach: Using Technology in Module Delivery to Students of English Language and Literature at the British University in Egypt

Azza Taha Zaki

Abstract—Technology-enhanced teaching has been in the limelight since the 90s when educators started investigating and experimenting with using computers in the classroom as a means of building 21st. century skills and motivating students. The concept of technology-enhanced strategies in education is kaleidoscopic! It has meant different things to different educators. For the purpose of this paper, however, it will be used to refer to the diverse technology-based strategies used to support and enrich the flipped learning process, in the classroom and outside. The paper will investigate how technology is put in the service of teaching and learning to improve the students' learning experience as manifested in students' attendance and engagement, achievement rates and finally, students' projects at the end of the semester. The results will be supported by a student survey about relevant specific aspects of their learning experience in the modules in the study.

Keywords—Attendance, British University, Egypt, flipped, student achievement, student-centred, student engagement, students' projects.

I. INTRODUCTION

FOUNDED in 2016, the young Faculty of Arts and Humanities in the British University in Egypt (BUE), with its two programmes: English Language and Literature and Psychology, has dedicated its teaching and learning endeavours to the enhancement of the students' experience. The teaching team in the programme of English Language and Literature has capitalised on their experience gained in teaching English for Academic Purposes to all the student population across the BUE and on their experience of teaching in the flipped mode. The flipped teaching approach, as implemented at the BUE, was shared in academic papers published in 2016 [1] and 2017 [2].

This paper is intended to share the experience of extending the flipped classroom approach as it is combined with technology-enhanced teaching and learning strategies in the delivery of modules to students of English Language and Literature in the young faculty.

Data used for the purpose of this study are collected from formal results posted on the University Students Record System (SRS), of students' results, students' online module evaluation, summary of reports from formal meetings of the

Azza Taha Zaki is with the British University in Egypt, Cairo Egypt (phone: +202 26890000; fax: +202 26875889; e-mail: azza.taha@bue.edu.eg).

Staff Student Liaison Committee (SSLC) and of the Faculty Teaching and Learning Committee (FTLC). The paper is further supported by a summary of trends identified from a student questionnaire about certain aspects in their learning experience.

II. CONTEXT AND RATIONALE

The aspiration to integrate technology in the teaching practices in the Faculty of Arts and Humanities is fuelled by the BUE strategic commitment that "Technology will inform student's learning and will underpin all student support services as well as academic functions" [3].

When the Faculty of Arts and Humanities started its programme of English Language and Literature with its three specialisation tracks of Literature, Linguistics and Translation, it recruited some of the relevant staff who had been teaching English for Academic Purposes courses across the BUE. Some of the staff joining the young programme had gained experience in dealing with the BUE students with their social, demographic and educational backgrounds, and were familiar with the flipped mode of teaching as it was implemented in the English Department. Moving to a different set up, staff had to rethink their experience to prepare for teaching content rather than skill-based English modules in the three specialisations. In teaching content modules in the new programme, delivery in most cases relied heavily on lecturing on the part of the teacher and taking notes on the part of the students. Although seminars and tutorials were included, there was little change from the traditional "chalk and talk" scene. Different teachers used their own individual knowledge and initiatives to include some elements of technology in their delivery with a view to diversify in-class activities and engage students. However, the technology element remained an ornamental addition to an otherwise traditional setting.

The Programme administration and team felt that there was a real need to extend the knowledge and skills gained by some staff from previous experience with the flipped classroom approach and combine it with the relevant technological tools to fit the new context. To work towards a shared understanding and agreement in this regard, concerted effort was needed in order to ensure that staff have common grounds. The starting point was the firm belief that teachers should know their "audience". Learners of today are the

children of their age: the Information Technology Age. Admittedly, the relationship between teachers and learners has undergone tremendous change which is redefining the educational role of both the teacher and the institution where young learners receive formal and systematic learning. The image of the 21st century learner as constantly wired to some technological gadget, such as a mobile phone, a tablet or a laptop is far from being a generalisation. If knowledge is everywhere at people's fingertips, what is the role of the teacher and the academic institution in this context? If teachers are to continue to lead the learning and inspire students, they certainly need to keep abreast with their learners' world.

A. Technology in Learners' Lives

There is wide educational agreement that technology has affected learners' attention span and concentration. Educators studied how television viewing has affected the concentration of children and teenagers. Research in this area [4] has concluded that television is linked to a diminishing attention span since within 30 seconds of turning on the TV, viewers go into a "passive yet stimulating" state as a result of the exciting sounds and visions on the screen. With the increasing variety and accessibility of technological gadgets "from those that sit on our desks to those that sit in the palms of our hands" [5], technology has further affected the learner's attention span, which is the most critical element in the learning process [6]. However, the sounds and lights in the different digital games and other different applications have managed to keep these young in intense concentration and they spend hours "focused on the stimulus… and engaged on the topic" [7].

B. Technology in the Classroom

Technological innovations and technological tools are everywhere in people's lives. The recognition that technology has been a double-edged weapon on the way young people learn, has led to wide educational research on the usefulness of computer-related technologies to capture and hold students' attention [8]. Working on the same recognition that young learners of today have become visual learners in most cases, Bitter and Legacy [9] have pointed to the importance of visual content in the teaching material to capture and maintain students' attention and retention of information. This attempt to reach students, capture their attention and motivate their learning is combined with the awareness of the need to prepare them for the workplace in the increasingly digitised world. The recommendation that "curriculum must go beyond content knowledge to include a strong emphasis on 21st century skills development" [10] has reinforced the conviction of the English Language and Literature Programme team that STEM education extends beyond the Science, Technology, Engineering and Math to include integrating technology with subjects such as design, humanities and art [11] to equip students with the right knowledge and set of skills to solve problems, gather information and evaluate evidence to form conclusions and make informed decisions.

In their research, Diana and James Oblinger identify certain characteristics of the children who grew up with computers. Among these characteristics are the following:

- Ability to read visual images as visual communicators;
- Visual-spatial skills as a result of visual games experience;
- Inductive discovery as they learn better by discovery than by being told [12].

Other research has identified the distinctness of the "Net Generation" as young people who "have never known a world without computers, the World Wide Web, highly interactive video games and cellular phones" [13]. Based on research with students from different universities in the United States, Roberts concludes that part of the learners' expectations is that professors will use technology in the classroom to better communicate expert knowledge.

II. Implementation

The introduction of the concept of a technology-enabled teaching and learning approach was inspired by the Faculty's teaching and learning strategic plan to take forward the BUE strategic goal of creating a 21st century campus and developing the skills of students to fit in the job market of today and tomorrow. In part, the endeavours in the English Language and Literature Programme respond to the University Pilot Project to increasingly integrate technology in all teaching practices across the BUE.

As a starting point, prior to the start of the academic year, preparations were made to share views and agree strategies on how to take the technology enabled pedagogy forward in the modules delivered in the programme. With the support and actual attendance of the Dean and the Head of the English Department to provide institutional support, these arrangements included:

- staff development workshops on the value of using technology effectively to support the teaching and learning;
- FTLC meetings to discuss relevant research in the area;
- informal dialogues among colleagues sharing views and best practices.

These meetings confirmed the need for all staff in the English Language and Literature Programme to share the view of how technology can best be put at the service of the learning process as an integral rather than an ornamental element.

III. Theoretical Background

In an article in 1986, Shulman explored the complexities of the teacher's understanding and transmission of content knowledge. He described the "missing paradigm" whereby the interplay between the teacher's knowledge of the content he is teaching and the knowledge of pedagogy was essential for effective teaching to take place. In other words, the teacher must have at hand "a veritable armamentarium of alternative forms of representation, some of which derive from research whereas others originate in the wisdom of practice" [14]. Shulman's article points to the necessity of the teacher selecting the right set of pedagogical approaches that best fit the content he is teaching.

The Pedagogic Content Knowledge (PCK) paradigm as

described by Shulman was revised and updated by Mishra and Koehler in recognition of the need to integrate technology in the teaching and learning process. To meet the attitudes and demands of learners in the Information Age, the two scholars added the digital technology element to the Shulman paradigm (PCK) to read TPACK- Technology Pedagogy and Content Knowledge.
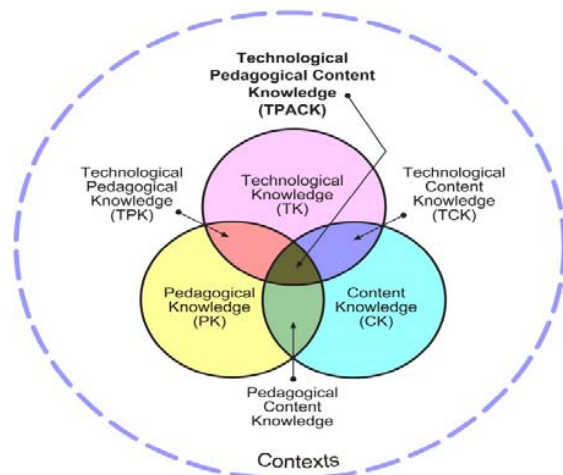

Fig. 1 Core components of the TPACK as set by [15]

The TPACK framework identifies three core components for teaching with technology to be effective: content knowledge, pedagogic knowledge and knowledge of technology. The interaction between the three core elements requires "an understanding of the representation of concepts using technologies; pedagogical techniques that use technologies in constructive ways to teach content; knowledge of what makes concepts difficult or easy to learn and how technology can help redress some of the problems that students face… and knowledge of how technologies can be used to build on existing knowledge…" [15].

What made this approach particularly interesting and relevant to our purpose in the English Language and Literature Programme is its marked departure from the existing approach of using technology as an additional ornament to the teaching. Instead, TPACK is an underlying understanding of the interactions between and among the three core concepts as opposed to the understanding and use of the three components individually. Moreover, TPACK acknowledges that teachers should have content understanding, pedagogical understanding and understanding of technology as three core facets of teacher knowledge. The different ways in which these facets interact will depend on the different "content" teachers are teaching. Thus, there is no one way of integrating technology in the teaching and learning process. It will vary with the content area and the context in which teachers are working. The TPACK framework seeks to support teachers' discovery of ways in which "technology-related professional knowledge is implemented and instantiated in practice" [15].

The TPACK framework was used as reference point to trigger teachers' exploration of different technologies to integrate the technology element with the pedagogy and content knowledge. In the same way, the revised Bloom Taxonomy has further informed much of the discussion and informal conversations among staff members in the programme. Created by Benjamin Bloom in 1956, the taxonomy was used by many educators to design learning tasks based on different levels of human cognition. Revised by Andrew Churches in 2008, the model was extended to make it more relevant to the digital environment of learners of today. Bloom's Digital Taxonomy as revised by Churches has kept the categories of remembering, understanding, applying, evaluating and creating but has extended them into the digital environment by identifying a learning task that students should be able to achieve digitally [16].
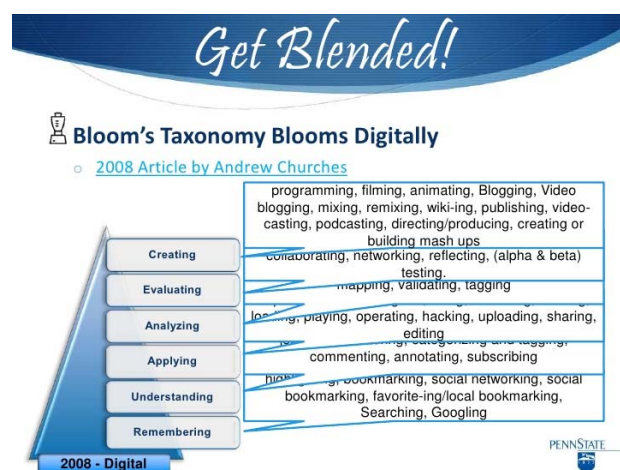

Fig. 2 Churches Digital Taxonomy based on Bloom's Taxonomy [16]

IV. DATA AND QUESTIONNAIRES

A. Teachers' Views

At the end of what was agreed to be called the pilot year, a questionnaire was shared with the 14 staff members on the programme requesting them to report on how much technology was integrated in the content and pedagogy of their modules.
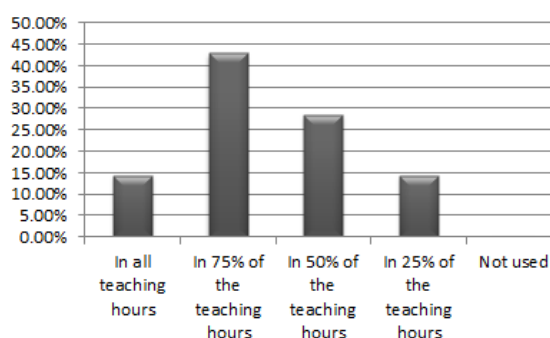

Fig. 3 Teachers' integration of technology in their module delivery

Fig. 3 shows that:

- 14.3% of the staff used technology in all the teaching and

learning process- for pre-class preparation, in-class explanation and student-based activities and after class follow up tasks;

- 14.3% used technology in 25% of the total learning and teaching endeavour;
- 28.6% used technology in 50% of the process; and,
- 42.9% integrated technology in 50% of the teaching and learning process.

Fig. 3 and the discussion ensuing show that, in agreement with the TPACK foundational principles, technology integration differed from one area to another. The highest integration level was in a module on Lexicography where the nature of the module dictated the level of integration and the final task where students had to produce a thematic electronic dictionary.

Similarly, as agreed in the staff development workshops prior to the start of the academic year, teachers gave more time and attention to create assignment tasks that involve the use of technology. These included, but were not limited to, enquiry-guided tasks where students worked in groups to explore a topic via internet search engines, presenting a topic to the class using multimedia and presentation tools, contributing to online forums to continue a certain class discussion outside the classroom, submitting writing assignments on Turnitin, that entailed internet searches, and receiving voice feedback. Fig. 4 shows the developmental use of technology among teachers to create technology-based tasks that would also require students to use technology to accomplish them.
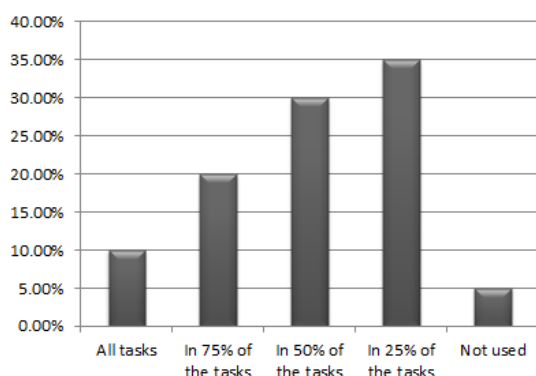

Fig. 4 Teachers' use of technology to create tasks and assignments

Fig. 4 shows that with the majority of teachers, a culture is being gradually cultivated towards fuller and more effective integration of technology in the teaching and learning process. It was noted that older, more experienced staff members in the programme who have been used to the traditional teaching methods showed a certain degree of discomfort at the start of the pilot since they felt they did not have the same competence of dealing with technology as their younger colleagues or their students. However, as Fig. 4 reveals, the majority of the teachers showed engagement and there was a communal supportive spirit to revitalise their teaching practices with the new concepts and tools. The FTLC meetings show teachers reporting that students were more eager to attend classes than

previously observed, and that participation in pair or group activities, both in class or electronically outside of class, was taken more seriously and attentively. This aspect of students' eagerness has stimulated staff members who were rather reluctant at the beginning.

B. Students' Views

Students' views regarding the integration of technology as an integral component in their learning experience in the English Language and Literature Programme are collected from the reports of the Staff Students Liaison Committee (SSLC) meetings which regularly take place towards the end of each semester. Student representatives reported the enthusiasm and excitement of most students as they became more engaged with different features of technology in their learning. Students' engagement with the technology integrated in the delivery, students' activities and assessment paid off in the regular attendance and participation in pair and group activities. Students also reported a general sense of satisfaction with the level of technological skills they are developing in the course of their study.

For the purpose of this paper, students' views were also collected through a questionnaire. The questionnaire asked 35 students to evaluate the different technologies used in their learning experience. Fig. 5 shows students' responses to the question of which technology has been the most useful as a learning tool.
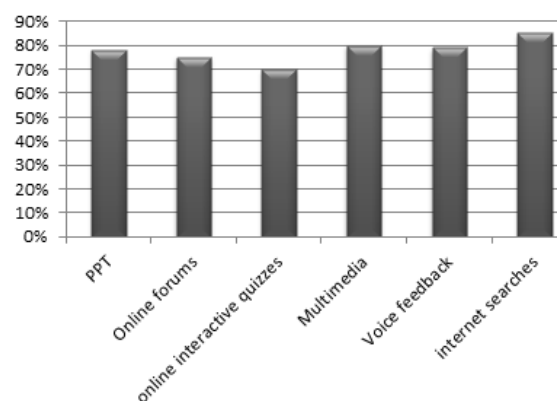

Fig. 5 Students' satisfaction with different features of technology as learning support tools

Students' responses reveal their excitement with the different technologies with the highest rates going to multimedia tools and internet searches for the inquiry-based tasks at 80% and 85%, respectively. The feature of receiving voice feedback on their tasks is also popular with the students (at 79%) as it provides an opportunity for more detailed feedback on students' work as well as saves the time that used to go to face-to-face personalised feedback in teachers' office hours. Voice feedback has the added advantage of expressively using tone of voice to drive a point home.

It is also interesting that PowerPoint presentations, which used to be commonly a part of most teachers' tools, are still popular with students (at 78%) as a reference point for after

class studying and revision.

Students were also asked to reflect on their learning experience to answer the question as to what factor contributed more to their satisfaction with their learning experience: technological features, module content, or teacher's expertise and rapport with the class. The chart below reveals responses from all 35 students.
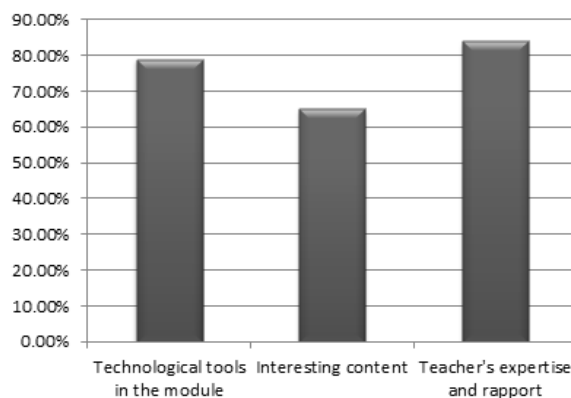

Fig. 6 Students rating of factors contributing to their satisfaction with their learning experience

Interestingly, and in agreement with previous similar research [10], the results reveal that in spite of their excitement with the technological components integrated in the learning experience, students still even more highly value the human factor in the learning experience. It is what the teacher can do with the technology rather than the technology per se that has made a difference in the students' satisfaction with their learning experience. Thus, teacher's expertise and rapport come first as the highest factor contributing to students' satisfaction (at 84%), followed by the technology used in the teaching and learning approach (at 79%) and the interest in the module content (at 65%). While this shows the high importance teachers still enjoy as the driving force in the learning process, it also points to the fact that staff in the programme have been able to accept their new roles as facilitators of learning rather than transmitters of knowledge.

V. Results and Evaluation

A. Students' Results

Students' results show that students in their first year in the programme (the Preparatory Year) needed time to adapt to the new learning environment, which was in most cases, very different from the traditional teaching they had received in their secondary school education. Thus, the general "pass at first attempt" rates of students in the Preparatory Year are lower than those of students in later study years in the programme. Table I shows a comparison between the mean pass at first attempt for both semester in the academic year 2018/2019.

Students in Degree Year 1 and Year 2, who have been on the programme longer, have been more exposed to technology as part of the learning process, however fragmented that

experience was. It is evident that students who have been exposed to some experience with technology as an additional support have been more comfortable in the more technology enhanced learning environment as implemented in the pilot year of 2018/2019. Results of the students in semester two are consistently higher as students got more accustomed to a more comprehensive and integrated technology-enabled teaching and learning approach.

TABLE I
MEAN PASS AT FIRST ATTEMPT

Semester 1 Pass Rates	
Prep Year	81%
Year 1	82%
Year 2	90%
Semester 2 Pass Rates	
Prep Year	88.9%
Year 1	86%
Year 2	91%

B. Students' Module Evaluation

Although the evaluation of the experience of integrating technology in the teaching and learning process as implemented in the English Language and Literature Programme is an ongoing process, it is useful to refer to the students' online module evaluation routinely taking place at the end of each semester. Below is an example showing students' satisfaction with a literature module in semester 2.

The module has received 4.94 out of 5 for the teaching and learning resources, 4.4 for the module content and 5 for the instructor delivery and support. This obviously flattering evaluation confirms the results obtained from students' questionnaires in Fig. 6 above which highlight the eminence of the role and expertise of the instructor.

C. Students' Products

It is also useful to refer to what students have been able to produce as a result of the technology-integrated approach to which they were exposed during the pilot year. Students created written work via technology and have been able to develop the skills to create the following products:

- A thematic electronic dictionary,
- Poster presentations,
- PowerPoint presentations,
- Instructional videos as a means of peer instruction,
- Submitting written work on Turnitin and responding to voice feedback.

VI. Challenges

In spite of the overall positive spirit the pilot year has created among colleagues in the programme, there have certainly been some concerns and challenges that need to be considered for future developments. Challenges faced by teachers in preparing themselves to start teaching with the support of some appropriate technological tools can be identified in the following trends:

- Initial unpreparedness to change their own teaching practices from the methods they themselves were taught as undergraduates. The traditional "chalk and talk"

loomed large for many teachers teaching the content modules in literature, linguistics and translation modules for the first time.

- Relevance of the technological tools to the module learning outcomes students are supposed to learn in the module.
- The time teachers need to spend in finding relevant technology that really integrates with the module content,

level and learning outcomes.

- Cultural appropriateness of the technology, especially multimedia and videos, to the students' environment.
- Pedagogical appropriateness of the technological tool and how far it serves to facilitate the learning of difficult parts of the content.
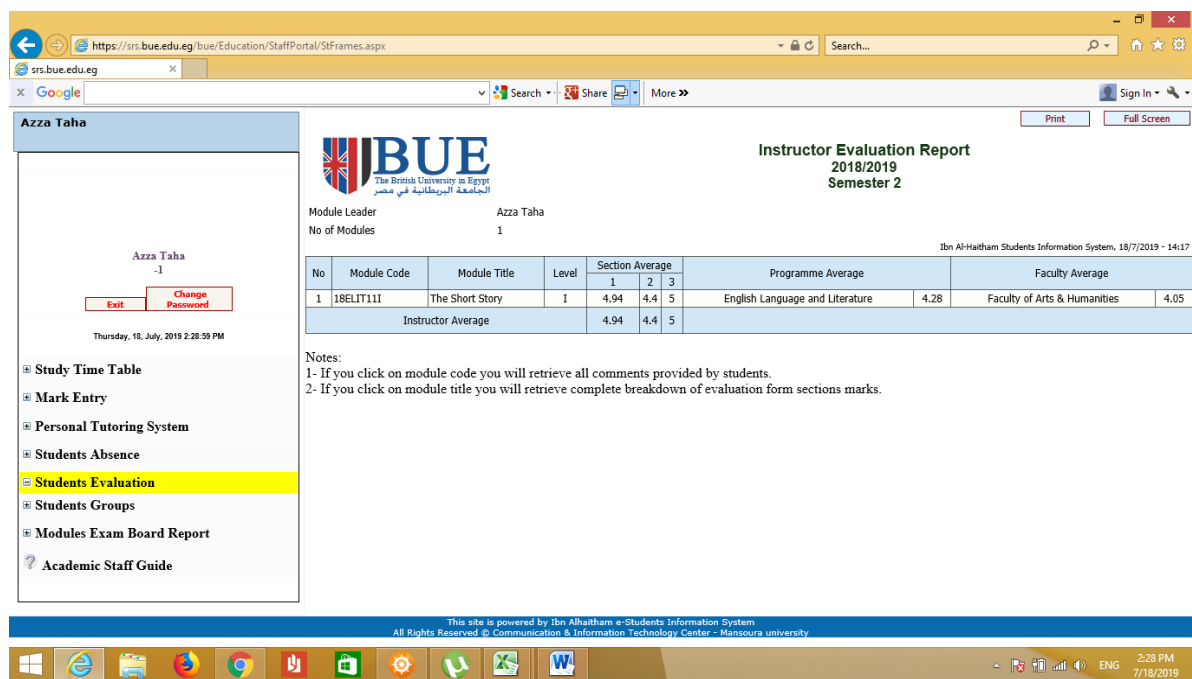- Appropriate technical infrastructure and IT support.

Fig. 7 Example of students' online module evaluation in semester 2 as obtained from the University SRS

Students have similarly identified some challenges which can be identified in the following trends:

- Students have generally used technology for entertainment, gaming and chatting purposes. It was necessary to orient students that using technology effectively for learning purposes was important to help them develop employability skills for the 21st century.
- It was sometimes noted that technology in the classroom was more of a distraction to students than a learning support. For example, in using mobile apps to do an in-class activity, students were commonly diverted by "WhatsApp" and "Facebook" notifications.
- Weak Wi-Fi in the building or the classroom can totally disrupt the task students are working on, so they digress and it becomes difficult to resume the work.

In spite of these challenges and concerns, there is a general satisfaction with what the programme has been able to achieve: an increasing awareness among staff and students of the underlying power of the effective integration of technology with the content and pedagogy to enrich, students' learning experience and revitalise teaching practices in the programme.

VII. CONCLUSION AND RECOMMENDATIONS

Tremendous advances in technology have taken the world by storm, and Egypt was no exception. Egyptians have been quick to take up technological gadgets, though mainly for entertainment and leisure activities. However, the educational system has remained traditional and conservative in all public institutions, ignoring the skills and the mindset of the young adults whose lives away from school and university are highly influenced by technology.

The internet has revolutionised how teachers and learners can communicate and share information. However, to a large extent, teaching techniques, especially in developing countries like Egypt, have remained unchanged. Many colleagues have remained uncertain of how to really use advances in technology to change the way they deliver. Private educational institutions, like the BUE, have the privilege of providing basic electronic services and of investing in the technical infrastructure that can support a move towards an education that recognises the necessity of developing students for the changing globalised job market.

Different teachers on the English Language and Literature Programme have used their own knowledge and initiatives to add activities using some technology, but these fragmented

efforts have remained at the ornamental level, a supplement to the traditional practice. A noted direction towards a technology-enhanced approach marked the academic year 2018/2019 as a pilot project to integrate technology in module delivery and assessment using a student-centred, enquiry-guided learning approaches to give a new impetus to the existing teaching and learning methods.

As evidenced by students' enthusiasm and engagement, the approach has enriched the students' learning experience, encouraged more regular attendance, developed soft skills for the learning as well as for the workplace and students have been proud that they were able to create educational products using technology.

To implement technology-enhanced learning effectively in the programme, it was essential to start with common agreement among the administration, the staff and ultimately the students in order to allow a culture to develop. It is safe to say that appropriate staff development to equip staff with the right technological and pedagogical skills is the right place to start.

In the same way, institutional facilities in the form of the necessary technical infrastructure, IT support, and above all, the awareness and the conviction on the part of the higher administration of the necessity of this investment are indispensable for any sustainable endeavour in that direction to continue. The electronic eLearning system at the BUE has allowed such work as has been done over the last year to take place. The BUE has the basis for the technology-enhanced learning environment and this support and facilities need to grow in order for teaching staff to maintain the exploratory and research-active spirit that would always keep them abreast with the changing world and the expectations of their students.

Nor is investment only meant to develop the technical infrastructure, increasing bandwidths and strengthening Wi-Fi signals. It is important to note that, as results from students' questionnaires and students' online evaluation reveal, investing in staff and emphasizing the teachers' expertise and supportive role and rapport with the students emerges here as of paramount importance. It seems that teachers will continue to inspire and influence learners even in the technology-driven world. There is no doubt that more efforts will be exerted in the coming year to further sharpen and refine the skills gained thus far.

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