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Evaluating the Prospects of Integrating Technology in Pre-service EFL Teacher Training

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Abstract

This evaluative study investigates the prospects of integrating technology into pre-service EFL teacher education. Findings indicate that it is a daunting task to separate the policy from practice in the process of technology integration within Saudi universities. Despite the technology-enhanced national policies in Higher Education, the evidence is mixed as to whether Universities policymaking has notably been influenced by these policies. At the practice level, pre-service EFL teachers reported average levels of technology expertise and their general use of technology outscored their use for EFL learning purposes. From another perspective, academic EFL instructors lacked sufficient technology expertise and their technology use was more idealistic than realistic. With the national support for technology use in Higher Education, Universities policymakers should attempt to bridge the technology gap existing between national policies and policies made at the University level. Also, technology project tenders should be officially

addressed to top officials at Universities, an initiative that should be taken by stakeholders at colleges and departmental levels. Recommendations at the practice level stress that academic instructors and pre-service EFL teachers should receive adequate, tailored, and continuing up skill training about how to best integrate technology into the process of language learning and teaching.

Key words: EFL, Pre-service teachers, Technology, Evaluation, Integration.

Evaluating the Prospects of Integrating Technology in Pre-service EFL Teacher Training

The aim of this evaluation is to present a situational analysis of the integration of technology in English as a Foreign Language (EFL) teacher training program in a Saudi Arabian University. This evaluation is informed by findings of a previous study that was conducted in the same context to investigate the use of technology as a medium for Foreign Culture (FC) integration (Al Asmari, 2008). It turned out, however, that the use of technology was very limited. Shifting the focus from FC integration per se, such findings sparked the trail of subsequent basic issues related to the use of technology in pre-service EFL teacher training. Found to be integral to the process of preparing future language teachers (Wildner, 2000), the integration of technology in Foreign Language (FL) teacher education is not restricted to prospective professional purposes; rather, the process of language teaching and learning in pre-identified monolingual pre-service EFL teacher training contexts can benefit from such integration to overcome curricular and contextual limitations. Basically, because technology

integration in the current context is not assumed to systematically exist, this evaluation aims to establish a baseline study for further experimental evaluations of the technology integration. The term technology in this context is employed to refer to the use of computer applications and the Internet.

First the context of the study is described with a brief reference to the key findings of the previous preliminary evaluation. Next, the significance, aim, and scope of the evaluation are outlined. Based on these particulars, the evaluation methodology, design, data collection procedures, and results are presented. Lastly, a discussion of the findings and recommendations conclude this evaluative study.

Context of the evaluation

The context of evaluation is a pre-service EFL teacher training program in a Saudi Arabian university. In this program, learners; i.e. pre-service Saudi EFL (SEFL) teachers enrol in a five-year training to become EFL teachers. Uniquely, however, these pre-service teachers are not expected to have high language proficiency upon enrolment. As such, they are involved in an intensive language learning program in the first two years as ordinary EFL learners. After that, they undertake advanced content courses in Theoretical and Applied Linguistics, literature, and educational preparation. Throughout these courses, the pre-service teachers' contact with the target language (TL) was found to be limited to the textbooks provided in formal instruction. Interaction in the TL was also restricted to their structured settings due to the monolingual nature of the SA context (Al Asmari, 2008).

With reference to findings from a preliminary evaluation (Al Asmari, 2008), the institution of this evaluation reflects features of limited access to authentic materials and limited

opportunities to practice the TL. Further, the limited access to technology at the institution besides the instructors' low involvement with using computer-assisted teaching raised several issues at the policy and practice levels. First, the lack of provision of access to computers is related directly to structural arrangements managed at the policy level. Second, instructors did not demonstrate any serious attempt to use technology in their practice although they could access computers off-campus. Third, pre-service teachers used technology extensively to learn about culture beyond formal instruction. Above all, the previous evaluation showed that the situation was highly policy-driven. That is, a great deal of the responsibility for the successful integration of technology fell upon individual policymakers, administrators, Colleges, and Departments.

Accordingly, the previous evaluation implies that several variables should be carefully assessed before assuming the integration of technology or even evaluating its impact experimentally. These variables may include national policies, university policies, access issues, instructors and students' technological expertise, views on constraints, and curriculum engagement with technology. Considering these areas, the present evaluation intends to explore the issues surrounding the use of technology in pre-service EFL teacher education in order to evaluate the aptitude for initiating further experimental technology-integrated studies in the process of preparing EFL teachers. To do this, the following set of questions can be posed:

1. What is the status quo of technology use by pre-service EFL teachers?
2. What are the institutional/structural factors that may influence the integration of technology in SEFL teacher education?
3. What are the academic instructors' views about the use of technology in their language teaching?
4. In terms of technology expertise, to what extent can academic instructors and pre-service teachers handle issues of technology-enhanced language teaching and learning?

5. How is the overall tenet of technology integration supported at the policy level?
6. What is the feasibility of implementing technology-integrated projects in further studies?

Significance of the evaluation

For exclusively monolingual contexts, the traditional approaches to language teaching and learning are not assumed to be sufficient to ensure optimal language learning. This assumption can be derived from a proliferating line of research that signifies the positive impact of integrating technological advances on areas such as second language (L2) skill development (e.g. Adair-Hauck, Willingham-McLain & Youngs, 1999), FL teaching enhancement (e.g. Egbert, Paulus, & Nakamichi, 2002), FL learners' achievement and interactions (Lee, 2000), FL teacher education (Pope & Golub, 2000). Put simply, there seems to be a universal agreement that technology integration in education improves teaching and learning and increases student achievement (Noeth & Valkov, 2004). At the same time, there also appears to be complexity and challenges in reliably evaluating the integration of technology. However, technology as a widely-recognised educational tool and major area of potential expenditure must be held accountable to its promise of enhancing language teaching, learning, and achievement. Thus, evaluating the use of technology for the sake of providing evidence of its impact on language teaching and learning may not be possible without sufficient information related to the target context of integration. As such, the significance of the current baseline evaluation stems out of the following issues:

- 1- In several studies, integration of technology proved integral to the process of teacher preparation and language teaching and learning.
- 2- Traditional approaches to language teaching and learning may not be sufficient in an exclusively monolingual context with a potential lack of TL resources.

- 3- An evidence-based justification is required to persuasively support integrating technology, especially in policy-driven programs.
- 4- Baseline data is needed for further experimental evaluations of the effects of technology integration in the SEFL teacher training in particular.

Aims and scope of evaluation

This evaluation is concerned with integrating the technology (i.e. computer applications and the Internet) to improve the quality of language teaching and learning in pre-service SEFL teacher training. Rather than adding it as an extracurricular component or arbitrarily introduced by enthusiastic individuals, the study aims to evaluate the prospects of systematically integrating technology as an integral part of the curriculum structure. To achieve this, Cuban (2001) emphasises a systematic approach to evaluating technological implementations which involves three major considerations:

- 1- Identification of educational needs
- 2- Specification of implementation goals.
- 3- Design of instructional strategies to create effective learning environments.

Out of these three considerations, the present evaluation is only concerned with the first two, since no actual systematic technology integration is known to exist in the context of study. In this regard, Alderson (1992) describes such an evaluation purpose as that which justifies further courses of action. Hence, this evaluation primarily demonstrates a baseline study to provide status quo information of the use of technology in SEFL teacher training in order to address the different challenges for technology integration. Further, this evaluation engages with a range of issues that have emerged from a previous preliminary evaluation that was based on qualitative approaches.

Due to the inextricability of issues found at multiple levels of concern (i.e. policy, teaching, and learning), the intended evaluation of this program aims to pursue the following foci:

- 1- To assess the current use of technology in the current SEFL teacher training program.

Source of data: Pre-service teachers' questionnaires and instructors' interviews.

- 2- To find out key shortcomings of the current program of SEFL teacher training in relation to the employment of technology.

Source of data: Policy/curriculum documents, pre-service teachers' questionnaires, and interviews with instructors.

- 3- To discover factors that influence utilising technology in practice (e.g. access, technological expertise, and curriculum limitations).

Source of data: Curriculum documents, pre-service teachers' questionnaires, and instructors' interviews.

- 4- To evaluate the national technology-related standards, if any, for teacher education.

Source of data: Policy documents.

- 5- To explore the policy views about the potentials for integrating technology systematically in the program.

Source of data: Policymakers' interviews.

- 6- To find out what is necessary to integrate technology in SEFL teacher education, and thus to develop agendas for this integration.

Source of data: all data sources.

Targeted audiences

This evaluation is mainly intended for use by SEFL policymakers, Heads of Departments and teacher training instructors who are concerned with making an optimal use of technology in SEFL teacher training. Furthermore, it targets pre-service SEFL teachers themselves who may have varying levels of developments as users of technology. Thus, this evaluation looks into these levels of views and technological expertise to provide data for succeeding evaluators to further conduct experimental evaluations. In the following, a brief description of those audiences in this context is provided:

- 1- *University policymakers*: they are deemed in this context as administrators who are in charge of decision making, planning, and curriculum design and development. Those policymakers usually hold PhD degrees in fields related to language and linguistics, education, and curriculum design. Those policymakers can hold different influential positions at the University such as Deans, Heads of Departments, and associate members of various key committees.
- 2- *Academic instructors*: they are language teacher trainers who are highly educated teaching staff having obtained a minimum of MA in disciplines such as TESOL, Applied or Theoretical Linguistics, or English literature.
- 3- *Pre-service teachers*: Within the first two years of the program, they are considered as language learners who ought to develop their language skills. In the next three years, they undertake specialised content courses in linguistics, literature, and professional development. This evaluation deals with pre-service teachers as EFL learners.
- 4- *Future evaluators*: After having baseline data available, other evaluators, either internal or external, will be able to carry on further experimental evaluations related to the use of

technology. This can be further facilitated by implementing practical recommendations and suggestions that will be put forward through the present evaluation.

Although this evaluation deals with localised University issues, it can inform other audiences such as evaluation researchers and educational technology planners, especially at the tertiary education level.

Guiding methodologies

Assuming that the technology integration has not yet been implemented in this context, this evaluation is intended to provide a baseline study for further evolutions of technology integration. In this regard, Kiely and Rea-Dickins (2005) have stressed the importance of conducting baseline assessments for two reasons: First, they provide an invaluable database for project planning and subsequent reviews of programs in developing countries. Second, the process of such assessments exposes the participating professionals to a valuable learning experience. While both reasons are legitimate in this context, this evaluation also paves the way for further evaluations in the area of technology integration into SEFL teacher education.

Referring to the area of educational technology, Noeth and Volkov (2004, p. 12) establish three approaches for evaluating technology use in education:

- Considering human and technology inputs (student, teacher, school, classroom, and other contextual influences),
- focusing on the process (types and areas of technology use in school and classroom), and
- expected and unexpected outcomes (student, teacher, family, school, and community achievements).

In the present evaluation, only the first two approaches of evaluating technology are pursued. Based on that, this evaluation is not yet intended to assess outcomes and effects for summative purposes; rather, it is more focused on assessing the needs (i.e. human and technological inputs), mapping the process of implementing the integration and its rationale, and outlining the quality of its goals and objectives (i.e. focus on the process). This evaluation aims primarily to provide information that is expected to contribute to the program development. Accordingly, the purpose of the present evaluation tends to be formative in the first place (Scriven, 1967 in Lynch, 1996).

Evaluation design

General perspective

To answer the questions that were posed earlier and to accomplish the aims of this evaluation, a combination of documents review and self-report methods are used. Since this evaluation does not lend itself to experimentation that seeks objective results (e.g. tests), the design of this study can appropriately be viewed as naturalistic. Lynch (1996) indicates that the naturalistic paradigm assumes that reality is not objective; rather, the reality is seen relative to issues such as the researcher's subjectivity, the social and cultural settings of the context of study. Similarly in this evaluation, the sought-after reality/knowledge about technology integration may be influenced by several contextual (e.g. curriculum limitations, access, and lack of resources), and individual factors (e.g. instructors and learners' technological expertise).

Data collection instruments

The instruments used in the present evaluation are discussed in the following with highlighted procedures for data collection.

Policy documents review

Policies in this context refer to curriculum guidelines that not only describe content but also prescribe teaching methodologies. Accordingly, technology integration has to interact one way or another with the program policies which inform content and pedagogy of the SEFL teacher training. In the current evaluation hence, program/curriculum policies are considered carefully to assess how these policies/guidelines acknowledge and perhaps accommodate the use of technology in the program.

In initial phases of evaluation, Alderson (1992) asserts that interpreting and understanding as much documentation relevant to the program as possible is highly important to facilitate the process of planning. Similarly, Weir and Roberts (1994) signify documentary evidence as direct and first-hand data. This evaluation therefore reviews initially any relevant policy documents designed as a reference for the program. This may include any standards, frameworks, departmental booklets, and curriculum descriptions that possibly relate to the SEFL teacher training in relation to technology. To do this, a document protocol was developed to provide a tentative description of documents and technology-related foci of evaluation. Documents analysis in this evaluation looks broadly into technology-related issues and available language teaching and learning methodology and resources. Implications of document analysis can be used to provide a progressive focus for the subsequent evaluation instruments; i.e. questionnaires and interviews.

Self-report survey questionnaires

The use of questionnaires in this evaluation aims at exploring the pre-service teachers' use of technology and how it may be used to increase the language learning opportunities. It also aims to assess their technological expertise in order to provide information about their needs for further developments as users of technology. Considering the ample advantages of questionnaires such as efficiency and deliberation, survey questionnaires serve the purpose of making wider sampling available (Weir & Roberts, 1994) to do with the large number of pre-service teachers that was detected in the context of study. Accordingly, 180 participants were recruited to complete this questionnaire.

In terms of design, the survey questionnaire for this evaluation was carefully developed based on the previous evaluation data and drawing on a wide range of validity and reliability-tested survey drafts from relevant fields. Examples of adaptations include the following:

- A survey of self-assessment of technology use (Al Asmari, 2004) and technological expertise (Al-Asmari A.M., 2005).
- A survey on factors that influence the use/integration of technology (Nasrollah, 2005; Jaber, 1997).

The questionnaire mainly consisted of a range of closed and open-ended questions. The reason for the focus on closed questions was that it was felt that it would generate convergent and discrete data which can be easier to compare and analyse (Weir & Roberts, 1994). Further qualitative data was also obtained from other sources. Closed questions included items with 7-point true /untrue scale design (McFarlane et al., 1997) and Likert scale with agree/disagree and

frequency categories (Miles & Humberman, 1994). The survey was pilot-tested with several participants before actual administration. Four main topics were explored:

- Pre-service SEFL teachers' technology use and access.
- Pre-service SEFL teachers' personal experiences with technology use in general and for EFL learning purposes.
- Pre-service SEFL teachers' self-assessment of their technology expertise.
- Pre-service SEFL teachers' assessment of factors that influenced their use of technology in their language learning.

Accordingly, the emerging data provided useful information that could be used to further shape the focused interview questions.

Focused interviews

Interviews in this evaluation were conducted following a focused type of interview with academic EFL instructors and policymakers. According to Weir and Roberts (1994), the form of focused interviews demonstrates a semi-structured approach that comprises pre-determined topics and allows for interviewees to develop uncovered areas of concern. Pre-identified topics and themes of interviews stem out of previous evaluation findings, similar evaluations in other contexts, and emerging themes from documents analysis and questionnaires results. The reason for selecting interviews to obtain data from policymakers and instructors was that they were deemed as key informants in the present context. Categorised as 'elites', it is believed that people in positions of authority can be uniquely helpful, as in some cases the research project would be severely constrained without their support (Gillham, 2005, p. 54). Similarly in this evaluation,

the integration of technology may not be possible without official and financial support that is usually enacted by policymakers or without active cooperation of instructors who still maintain an academic legacy despite the policy-driven program. As such, interviews allowed for extended responses from such key figures who are assumed to be more knowledgeable and perhaps, more influential in the current context of study. Respectively, the interviews were conducted with instructors then with policymakers and responses were taken down as notes.

Interviews with academic SEFL instructors

Following the pre-service teachers' questionnaires, interviews were conducted with academic EFL instructors. Although a tentative interview guide was developed, questions of instructors' interviews were further informed by themes that are expected to emerge from previous instruments such as the influence of policy on their practice and the technological initiatives to using technology in practice. Other major themes that instructors' interviews covered were issues related to their views on the use of technology, factors and constraints, and indirect questions intended to reveal their technological expertise. Data from the instructors' interviews were expected to uncover technological issues at the teaching level and put them forward to be considered at the policy level. This included demanding needs such as professional development, access to technology, and curriculum limitations that overlook prescribing technology-related solutions.

Interviews with policymakers

Eventually for policymakers, interviews in this evaluation not only provide information about the feasibility of integrating technology in the program, but also they facilitate negotiating the implementation extent of this integration and necessary procedures. Reflecting on the expected results from document review, pre-service teachers' questionnaires, and interviews with instructors, interviewing the policymakers also provide an opportunity to demonstrate the already obtained data and

explore the policymakers' responses towards the emerging needs. Accumulatively, this is expected to inform the scope of technology integration in order to develop an appropriate framework. To cope up with the expected emerging themes from other sources and instruments, a tentative interview guide was developed.

Validity issues

Enhanced by the triangulation technique, the present evaluation employs three different instruments from different sources; documents review, survey questionnaires to be completed by pre-service teachers and semi- structured/focused interviews with instructors and policymakers. According to Lynch (1996), the triangulation technique not only proves useful as an analytic strategy that further explains the data and strengthens the evaluation conclusions, but also it increases the validity as well. Considering the assumption that many unexpected themes and events occurred during the evaluation (Alderson, 1992), the interviews and questionnaires remained tentative and open to further modifications. Besides the fact that the current evaluation was driven by outcomes of persistent observation from previous evaluation, the validity of the current evaluation was further established by following a range of techniques based on Lynch (1996, p. 69):

1. prolonged engagement is achieved by the nature of the evaluator's insider involvement;
2. member checks are be made available through employing several instruments; each shaped and was informed by previous findings;
3. as it is the nature of naturalistic enquiries, thick description is provided about the context and process of the evaluation;
4. as data was gathered from different sources, the evaluation findings and conclusions were substantiated in the form of multiple perspective negotiation.

To further facilitate these techniques, Alderson's (1992) recommendation of starting the data analysis once it was gathered was considered to assure improving the usability of the data and to pursue further adjustments for instruments and procedures in light of the emerging insights. Informed by policy document analysis broad perspectives, the data gathering and analysis followed a progressive focus approach where the survey results in turn informed the process of interviewing by providing key issues and specific foci for further investigation.

Results

The results of this evaluation are reported in three main sections. The first section divulges the pre-service SEFL teachers' technology use. These results provide a view of how technology is used by pre-service teachers, and illustrate how technology is being accessed and utilised in the process of their EFL education. This section also sheds light on constraints to the use of technology in the process of their pre-service EFL teacher education. The second section reveals the academic EFL instructors' views of how technology is currently used in pre-service SEFL teacher education. This section highlights how they currently use a variety of technology in general, and more specifically, how it can appropriately be integrated to optimise pre-service SEFL teacher preparation. The third section shows the status quo of technology use in pre-service SEFL teacher education. This section evaluates how the current curriculum supports or hinders technology use.

Pre-service teachers' technology use, access, and expertise

Technology use

180 pre-service SEFL male teachers participated in this survey. Their age ranged from 19 to 28 years ($M= 22.633$, Std. Deviation= 1.506). Based on how long they spent at the University, they were distributed to five years as shown in Table 1 below:

Table 1: The sample of the pre-service SEFL teachers' survey questionnaire

Groups	Numbers	Percentage
First year group	4	2.2
Second year group	11	6.0
Third year group	59	32.8
Fourth year group	90	50.0
Fifth year group	16	8.9
Total	180	100

The majority of participants started using computers either in secondary school or after secondary school with a total of 70 percent. While 25.6 percent of the participants reported that they first started using computers in elementary school, only 4.4 percent (i.e. 8 participants) claimed starting using computers even before school age as indicated in Table 2 below. These results indicate that all participants are familiar with the use of technology regardless of when they actually started using it.

Table 2: First use of technology

First time use of computers	Frequency	Percent
Before school	8	4.4
Elementary school	46	25.6
Secondary school	68	37.8
After secondary school	58	32.2
Total	180	100.0

Regarding the Internet use, similar results show that 85 percent of participants started using the Internet from secondary school and beyond. Considering the fact that Internet services was actually introduced to the public in Saudi Arabia in late 1990s, most participants, with a mean age of 22.6, had already left elementary school at that time. Therefore, participants' claim that they started using the

Internet within the categories of ‘before school’ and during ‘elementary school’ appears to be invalid.

See Table 3 below.

Table 3: First use of the Internet

First time use of the Internet	Frequency	Percent
Before school	3	1.7
Elementary school	24	13.3
Secondary school	72	40.0
After secondary school	81	45.0
Total	180	100

According to the results, participants had various reasons for starting the use of the Internet such as communication, online games, and information search. However, the majority of participants, 62.2 percent, reported that they started using the Internet for the email service. See Table 4 below.

Table 4: The reason for starting the use of Internet

Reason for use	Frequency	Percent
e- mail	112	62.2
Other reasons	68	37.8
Total	180	100.0

Domains of technology use

Participants were asked to report on their technology use by responding to Likert-type items related to two domains of technology use either in general or in EFL learning. The level of use of technology is represented by a mean score based on 5-point response scale ranging from 5 (Very often) to 1 (Never). Accordingly, the higher the mean score, the more use of technology there was in the related domain (i.e. general use or in EFL learning).

In terms of general use, results indicate that participating pre-service EFL teachers often used features like file download, web surfing, online chat, and email with a high mean score (above 3). The total mean score of technology for general use was 43.806 (out of maximum mean of 73.00).

As for EFL learning purposes, pre-service EFL teachers' use of technology was relatively limited compared to their reported general use. Only features like email and messenger were generally reported as being used by participants for EFL learning purposes with mean scores above 3. The total mean score for technology use in EFL learning was 35.606 (out of 61.00 maximum mean) which is less than that reported for general use as shown in Table 5 below.

Table 5: Pre-service SEFL teachers' domains of technology use

Domains of use	N	Minimum	Maximum	Mean	Std. Deviation
General use of technology features	180	15.00	73.00	43.8056	10.8890
Use of technology features <u>in EFL learning</u>	180	13.00	61.00	35.6056	10.5595

Technology access

To check the pre-service EFL teachers' accessibility to technology resources, it was necessary to look into technology access locations. To do this, participating pre-service EFL teachers were asked about where they accessed technology more commonly. Participants were given options of locations that included the home, the classroom, the computer lab, and Internet cafés. Results show that most participants often use technology at home; i.e. 97 students (53.9 percent). However, about 57 participants rarely used the technology at home (i.e. 31.7 percent).

Surprisingly, most participating pre-service SEFL teachers reported not using technology in the classroom (Never= 51.7 percent) and (Rarely=34.4 percent). This means that there was a severe lack of technology use in formal instruction. The majority of participants never used technology in the computer lab (57 participants= 31.7 percent), and 72 participants (i.e. 40 percent) of participants rarely used technology in the computer lab. Such results give a clear indication that the computer labs in the schools were not effectively being utilised in pre-service EFL teacher education.

To further find out about other venues for technology access, the questionnaire asked pre-service EFL teachers about using technology in Internet cafés. Most participants reported that they never or rarely use technology in an Internet café including 106 students (i.e. 58.9 percent). Despite such negative results about accessing technology at the university and Internet Cafés, most participants claimed that they never or rarely used technology in anywhere else often than at home, about 144 participants= 80 percent. See Table 6 below.

Table 6: Pre-service EFL teachers' accessibility to technology

Responses	At home		In the classroom		In the computer lab		In Internet café	
	Frequency	Percent	Frequency	Percent	Frequency	Percent	Frequency	Percent
Never	19	10.6	93	51.7	57	31.7	30	16.7
Rarely	57	31.7	62	34.4	72	40.0	76	42.2
Sometimes	3	1.7	2	1.1	1	0.6	3	1.7
Often	97	53.9	23	12.8	49	27.2	71	39.4
Very often	4	2.2	0	0	1	0.6	--	--
Total	180	100	180	100	180	100	180	100

Technology expertise

Pre-service EFL teachers reported their level of computer literacy by responding to 5-point Likert-scale items related to selected computer applications. The total mean score for participants' level

of computer literacy was 21.4722 (out of 40.00 maximum mean). Such results demonstrate an average level of computer literacy in features deemed to be necessary to use computers. As such, questions are raised about how effectively technology can be used by pre-service EFL teachers with less advanced computer literacy.

The participating pre-service EFL teachers were also asked to report on their self-perceived Internet skills. Results show that the total mean score for participants' level of Internet skills was 26.4167 (out of 40.00 maximum mean), demonstrating above the average level of using various Internet features. Most of these features are of communicative nature such as email use, instant chatting, or forum posting. It is noticeable that such Internet features are usually utilised through personal practice such as use of search engines and file upload and download. Despite the slight increase of the participants' reported Internet skills over computer skills, there is an arising assumption that participants did not receive formal instruction on purposeful use of such features. For example, advanced features such as creating Webpages hit low scores at the advanced and expert levels (20.6 and 11.1 percent respectively). See Table 7 below.

Table 7: Pre-service teachers' self assessment of technology expertise

Type of expertise	N	Minimum	Maximum	Mean	Std. Deviation
Computer expertise	180	8.00	40.00	21.4722	6.4759
Internet skills	180	8.00	40.00	26.4167	7.7177

Constraints to the use of technology

Based on the current standardised survey, constraints to the use of technology were represented in seven items: Attitude, curricular and administrative, guidance, access, expertise, and time constraints in and outside the classroom. In general, participants of this survey agreed on the nature of the constraints that restricted the use of technology in pre-service SEFL teacher training. The range of this the scale was 1-5, and the mean score of responses for the sample was over 3 for all the seven constraints. See Table 8 below. One of the highest means scores was the participants' response that there was a limited access to technology on campus. This goes in line with the previous results of this study which showed that there was a limited access to technology in classrooms.

Table 8: Pre-service teachers' views on constraints to the use of technology

Items	N	Mean	Std. Deviation
1-There is a lack of interest in using technology for EFL education.	180	3.2111	1.1335
2-There are administrative and curricular restrictions.	180	3.0444	.9143
3-There is insufficient guidance to use technology in EFL education.	180	3.2722	1.0239
4-Access to technology is limited on campus.	180	3.3611	1.1074
5-There is a lack of technology expertise.	180	3.3833	.9588
6-Time is an obstacle to using technology in class.	180	3.3611	1.1616
7-Time is an obstacle to using technology outside the class	180	3.0500	1.2608

Academic EFL instructors' views about technology use

Qualitative data was coded and analysed using NVivo 7. There was a common view amongst instructors that technologies were very important in the process of EFL education. Also, the data showed high levels of enthusiasm for the use of technology EFL education due to its widespread accessibility and the range of opportunities it offered. A close analysis of the use of technology was attempted to check the instructors' views and barriers to using it as a medium that facilitates SEFL teacher training.

Instructors' views about the use of technology

All instructors viewed technology as an important resource of EFL input for pre-service SEFL teachers. EFL input included information via the Internet or ready-made materials in the format of programs on CDs or DVDs. The opinions of instructors about the importance of technology were derived from their wide-spread accessibility and the variety of EFL content they offer. Table 9 demonstrates some exemplary comments.

Table 9: Exemplary comments of instructors' views about the use of technology

S	Participant (pseudonyms)	Comment
1	Adam	Many of my students are quite acquainted with computers and they access the Internet, they have emails and they join the chat groups.
2	Harris	It is so important. All people are using it and become influenced by the information it offers...
3	Sam	They also need to develop their Internet surfing skills, so they can discover things by themselves and communicate with others online.
4	Fred	It is an aid the can help us teach language in general...
5	Tony	Internet has been very important in providing students with materials to read. Students bring in Internet articles. Also, they are packages available to teach the language. If the students can make use of these packages, I think they can improve their English language...
6	Bell	Computer is a great tool in education now and I think it can serve various purposes in the teaching of language
7	John	Many of our students tell about using technology to communicate with their friends through the internet. Increased use of the Net and other related technology is sure to promote cross-cultural communication.

In general, instructors indicated that pre-service SEFL teachers had access to the Internet, and technologies were used extensively outside the classroom. Considering the limitations in terms of materials printing and dissemination in the current context, all instructors assumed that EFL input in the form of materials, tasks, and projects could be found and delivered easily online beyond the classroom boundaries. Also, this consensus of views suggests that technologies can expose pre-service SEFL teachers to English language resources that would not be available otherwise, due to the limitations of

the curriculum and the physical setting. Such views confirm the results obtained from the questionnaire which highlighted the limited access to technology in the formal instruction settings of pre-service SEFL teacher education.

Furthermore, the instructors' responses implied that the availability and feasibility of technologies could generate useful directions in EFL teacher preparation. Few of these directions have actually been recognised by instructors, and others saw a potential for implementation in the light of instructors' visionary responses. For example, several responses implied that the use of technology could enhance autonomous EFL learning in which pre-service teachers could advance their language skills. Fred for example, suggested that pre-service EFL teachers could be trained in the use of Internet surfing skills to help them carry on autonomous EFL learning: "They also need to develop their Internet surfing skills, so they can discover things by themselves and communicate with others online".

Instructors views on barriers to the use of technology

According to the academic EFL instructors' responses, there were a number of barriers that hindered the integration technology into pre-service EFL teacher education; see Table 10 below for some exemplary comments.

Table 10: Exemplary comments of instructors' views on barriers to the use of technology

S	Participant (pseudonyms)	Comment
1	Adam	[About technology integration]... It is a very good idea provided that the instructors and learners know how to use technology.
2	Harris	Some people write articles and publish them on the Internet without questioning the content, and others read and believe what is in there
3	Sam	It is very important, but I do not use it in class due to lack of access to computers.
4	Fred	The lack of technological equipment in classes is a barrier to teach using computers or multimedia.

5	Tony	We need to encourage the student to have access to computers and the Internet, especially in chat rooms where they can communicate...
6	Bell	It is difficult to use that in the classroom because there is not presenting information on the screen. Many student have access to computers and the Internet (e.g. email), so I think this is something that can be built upon
7	John	Another aspect is that most of us, academic instructors, are not efficient in the use of computers, so that is also another obstacle which can prevent getting access to a lot of things. But we direct students who are more efficient in using the Internet...

First, despite all the positive implications by academic EFL instructors regarding the feasibility of technologies, data analysis shows that their views reflected a lack of applicable ideas about how these technologies could further be utilised in practice. Also, data implied that the instructors' views were not matched by action. Therefore, raising the instructors' awareness of a robust utilisation of technology is urgently needed in the process of pre-service SEFL teacher training.

Second, all instructors stressed the importance of technology as a means for communication where pre-service EFL teachers get connected with interlocutors from the TL context and access materials to advance the proficiency of the TL understudy. However, the issue of finding reliable online interlocutors and authentic materials was raised by several respondents. Because unauthentic interlocutors and materials could be uptaken by students as a realistic representation of the TL and culture, several instructors warned that cultural risks can potentially threaten establishing authentic understanding about the TL and culture. As such, further guidance on appropriate materials and ways of online communication is urgently recommended by academic EFL instructors.

Third, responses implied that the accessibility to online useful materials and self-accessed resources from anywhere meant that it was available for pre-service SEFL teachers from off-campus sites. In what seems to be relevant to results of the questionnaire, none of the participating instructors

reported actual support for technology-based instruction in their teaching practice. Given these implications, all of these comments, again, portray visionary thoughts about using technologies in SEFL teacher education. This notion could be further evidenced through one comment in which an instructor admitted that pre-service teachers already used such technologies, yet he emphasised the need for formal mentoring to make them more relevant and meaningful.

Forth, responses indicated that a persisting barrier to the integration of technology was the lack of access to computers on campus which can be related to structural obstacles that may be difficult to control at the practice level. There was a tendency among instructors to refer to their lack of access to computers on campus in order to account for not using technologies in their teaching practice. One instructor explained that other computer-related aids such as projectors were lacking as well. Furthermore, there has been poor provision of computers and labs on campus. Subjects that essentially require access to computers, such as CALL (i.e. Computer-Assisted Language Learning) were even run in traditional classes.

Lastly, qualitative responses indicated that the instructors' lack of computer literacy emerged as a barrier to using technology effectively in their practice. The instructors' limited views about how these technologies could be utilised to facilitate the process of pre-service SEFL teacher preparation can be supporting evidence for their limited technology expertise. Furthermore, some responses revealed that a large number of academic EFL instructors were not quite computer-literate. One instructor explicitly revealed that many of his colleague instructors lacked expertise in using technology, and raised the issue of the need for more in-service training.

The place of technology in the current policies and curriculum

Policymakers' views on the use of technology

Drawing on issues that emerged from the analysis of data that was obtained from pre-service SEFL teachers and their instructors, three policymakers were interviewed. The focus was placed on three main emerging issues: The technology gap, the documentation dilemma, and the availability of funding resources. Table 11 shows some examples of policymakers' comments.

Table 11: Exemplary comments of policymakers' views on the use of technology

S	Participant (pseudonyms)	Comment
1	Yasser	Now the new curriculum used in colleges has a tendency to use the advances of knowledge that we have; computers, internet, audiovisual materials, all of that has not been brought into development because of political reasons, but because of advances of knowledge. If the change is because of political reasons, it will take time before it happens eventually
2	Rayan	None of our textbooks meets the standards set by NCELDE. If you wanna look at the documents I think they have it. This is one of the main things that group the relationship between universities policies and national plans.
3	Mohammed	With the EFL implementation depends on the degree of foreign interference in the business of language teaching in this region. In the future, I think that a huge gap that is present in our educational system will be trying to fill quickly; that is the gap of technology...; we have a gap regarding this issue in all curricula, not only EFL curriculum.

The interviewed policymakers clearly stated that there had been a technology gap in the structure of the Higher Education policies. While technology use in education had been tremendously supported at a national level, the implementation of these policies had not been effectively introduced into individual universities guidelines. One policymaker elaborated on this point by expressing his dissatisfaction about the existing guidelines and curriculum polices, especially in terms of technology use. He argued that the existing curricula did not emphasise the use of technology as an integral element of practice despite the stress that has been made on the necessity to integrate technology into education by the Ministry of

Higher Education (MOHE). Given that curricula of Universities are developed by the academic instructors themselves, there is a developing notion that curricula experts may have missed the significance of establishing a link to the national policies in terms of technology use.

From a relevant perspective, policymakers' responses convey that there is a dilemma in the process of developing curriculum documents. These documents are usually developed by curricula experts at Universities, and they may not be emphasising technology use in their prescribed guidelines and methods. This can be one reason why academic instructors do not take the use of technology seriously in their actual practice.

In terms of structural arrangements, the availability of funding resources for technology infrastructure was confirmed by policymakers. Specifically devoted to technological projects, policymakers revealed that there was a quota in the overall University budget allocated to finance educational aids and technology innovations. However, respondents pointed out that the expenditure was based on tenders that requested funding these projects by various colleges, and top officials must be officially requested to provide sufficient funds for these projects. As such, they implied that colleges and curricula experts may not find the urge to initiate such projects at a large extent, and eventually technical infrastructure and requirements might be left behind in the overall Universities developmental projects.

National policies

Resorting to technology-related national documents, data analysis revealed that the National Centre for E-Learning and Distance Education (NCELDE) had been established by a Royal Decree as a part of holistic national plan for the utilisation of information technology (IT). The plan recommends the implementation of E-learning and distance learning and all their prospective applications in higher

education. This plan has been developed as a result of the increasing demand to enhance the education process, thereby supporting the traditional educational model which may not be sufficient in preparing students for the complexities of today's rapidly developing society (NCELDE, 2009). According to the status quo of Higher Education in Saudi Arabia, however, every University is a policymaking authority in its own right provided that decisions are made within the framework of the Ministry of Higher Education. Needless to say, a closer look at the University guidelines and policies on the use of technology is needed for the present evaluation.

University policies

By examining the existing curriculum guidelines and broad policies, the researcher did not locate any indication of encouraging the use of technologies in practice. Confirming the policymakers' responses, this finding proves how the importance of technology is generally minimised in pre-service SEFL teacher education. This may also account for the limited engagement of academic EFL instructors in utilising technology to enhance teaching and learning.

The currently available curricular model of pre-service SEFL teacher education was not only framed by institutional conditions but also by the academic EFL instructors' visions about ongoing development. While most of the goals and standards as defined in policies include various references to technology use, these policies are mere general recommendations that never encourage integrating technology into pre-service SEFL teacher education programs. Course files that are continually updated by instructors were also helpful in giving an insight on how technology use is encouraged. Having reviewed all of these files, the researcher did not find any particular section that mentions the use of technology in the process of training, except where cited in a CALL course file.

Discussion and conclusions

The present baseline evaluation can contribute to the tenet of technology integration in three interrelated perspectives: policy, practice, and evaluation.

Policy and technology integration

At the policy level, the outcomes of this baseline evaluation are likely to inform the universities policymaking in terms of technology integration in three main aspects: Bridging the technology gap, motivating external evaluations, and supporting structural developments.

First, recommendations of integrating technology use in pre-service SEFL education can be made at the University level to overarch the technology gap existing between MOHE and the National Centre for E-Learning and Distance Education. Within this flux of interrelated policies, active integration of technology-based resources, pedagogies, and content is necessary to inform the policy-driven practice (i.e. teaching and learning) prevalent at the context of study.

Second, this evaluation provides baseline data in issues related technology integration into the pre-service SEFL teacher education. Based on this data, further experimental evaluations, perhaps by external experts, is recommended to assess the impact of technology on the process of teaching and learning.

Third, structural suggestions may be posed to plan for establishing more sophisticated infrastructure to accommodate the potential technological initiatives; e.g. expanding access and setting up electronic learning environments. Due to the reported lack of sufficient technology expertise, professional development and upskill programs are highly recommended to develop instructors and pre-service teachers' technological expertise, especially in aspects related to instructional purposes. All in all,

policymakers need to conduct a needs analysis of technological requirements and raise awareness about the significance of integrating technology into curricula development and classroom practice.

Practice and technology integration

At the practice level (teaching and learning), instructors are assumed to reap several advantages out of this evaluation. These advantages can be discussed in two main perspectives: Instructors' initiatives and taking advantages of policy-driven technology enhancement.

First, individual instructors who already utilise technology are urged to place requests to support their technology-oriented instruction and visions logistically and methodologically. The others who may lack sufficient technological expertise are recommended to take advantage of professional development and upskill programs that are expected to be initiated at a large scale. In alignment with the assumptions of positive impact of technology, this movement in turn will result in more facilitated language teaching and learning, and more opportunities to engage with the TL through content and interactions.

Second, the instructors and pre-service teachers' responses on technology use were not highly directed to purposeful use in their teaching and learning process. This brings to fore an assumption that general use and access to technology does not necessarily reflect purposeful use for EFL education. Such results also raise serious questions about the relevance of the limited access to technology in educational settings to the limited use of these technologies for educational purposes. Therefore, it may be assumed that the limited access to technology within educational settings reflects less opportunities to educate pre-service teachers about instructional uses of technology, specifically for EFL learning and teaching purposes. By attending to the previous recommendations at the policy level, technology access and

settings, technology-based professional development, and technology-enhanced curriculum guidelines are major requirements that impact on the integration of technology at the pre-service SEFL teacher education.

Evaluating technology integration

From an evaluation perspective, the present evaluation can inspire the development of innovative approaches to evaluating the prospects of integrating technology into pre-service EFL teacher education at other Universities and similar contexts; that is, contexts where technology has not yet been integrated in a systematic fashion. Drawing upon the findings of the present evaluation, conducting further experimental evaluations in the area of technology integration can be further facilitated based on the data obtained from this evaluation.

Assuming that the agendas proposed in the present study are implemented, prospective attempts can include evaluating the effectiveness of technology integration in SEFL teacher education and the impact of technology-supported resources on the actual process of language learning and teaching. It is also hoped that the information provided by the present evaluation can contribute to addressing issues relevant to the professional development of pre-service teachers; i.e. how to employ technology in their future career as EFL teachers. In order to achieve this, it is also likely that further experimental evaluations, stipulated by enacting the proposed developments at the aforementioned levels, can be carried out in response to the practical recommendations synthesised from this evaluation.

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