

# Technology and Teacher Training: Assessing Incidental Learning on In-service Courses<sup>1</sup>

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## Abstract

In this paper I investigate whether the use of technology on in-service teacher training courses results in increased learning in terms of incidental and independent learning. Given that working teachers have different knowledges, histories and experiences, traditional courses may not be able to respond adequately to a wide range of professional needs and teaching contexts. By analysing an MA in TEFL and an in-service course for university language teachers, I examine how course participants viewed their learning progress. Through the use of questionnaires, I conducted qualitative research as to whether on-line technologies provided opportunities for incidental learning i.e. learning that is not the primary focus of the course. To achieve this objective, I present the specific investigative context, the research findings and the subsequent analysis and conclusions.

## Resumen

En este escrito investigo si el uso de la tecnología aplicada a cursos de entrenamiento para maestros en servicio incrementa su aprendizaje de forma incidental e independiente. Dado que cada uno de los profesores en servicio cuenta con conocimientos, historias y experiencias diferentes, los cursos tradicionales podrían no responder adecuadamente al amplio rango de necesidades profesionales y contextos de enseñanza que éstos requieren. Mediante el análisis hecho a una maestría en la enseñanza del inglés como lengua extranjera y a un curso para maestros de lengua a nivel universitario, exploro la manera en la que los participantes percibían el progreso de su aprendizaje. Para ello, recogí información cualitativa a través de cuestionarios cuyo propósito era revisar si la tecnología en línea les proveía de oportunidades de aprendizaje incidental; es decir, aprendizaje cuyo enfoque principal no fuera el del curso. Para cumplir con mi objetivo, presento el contexto específico de la investigación, los hallazgos, el correspondiente análisis y las conclusiones.

## Introduction

Whilst students of English as a Foreign Language (EFL) often willingly embrace new technologies both inside and outside the classroom, language teachers have sometimes shown reluctance and a lack of enthusiasm. Furthermore, the use of new technologies has often focused more on the novelty value of the latest software rather than on obtaining feedback from the learners themselves with regard to the effectiveness of such programmes. To investigate teachers' own perceptions of on-line learning and their own progress, I have conducted research with teachers currently undertaking on-line in-service teacher training courses offered by a Mexican public university.

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To answer how teachers perceive their own progress, I first describe how the new technologies respond to teachers' needs. Secondly, I explain the characteristics of two on-line programmes which were the focus of this study. Thirdly, I present the results of qualitative research which examined how teachers perceive deliberate, incidental and independent learning on the courses. To achieve this objective, I present the specific investigative context, the research findings and the subsequent analysis and conclusions.

### **EFL Teachers and Technology**

Whilst pre-service teacher training courses are largely carried out in the traditional classroom setting with instructors leading and guiding the class, it is often difficult to organise in-service training courses in the same way for three main reasons. First of all, teachers, even within the same institution, work long and varied hours and it is difficult to schedule a mutually agreeable course schedule and timetable. Secondly, teachers are often scattered across a wide geographical area and travelling times undermine the feasibility of running such courses. Thirdly, teachers have different and contrasting needs and therefore it is difficult to organise homogenous groups. To meet such challenges, on-line distance courses offer a way for teachers to study from their own location, in their own time and enrol in courses that satisfy their own personal needs.

In-service on-line teacher training courses can be found from proficiency level to B.A. and postgraduate levels and are offered both by private and public universities. For reasons of space, I will not describe different on-line courses but suffice it to say, courses often share the same characteristics: they are part-time; students follow a course programme; resources can be downloaded, and there is on-line contact with a tutor. A popular platform for offering these courses is Moodle, which offers a range of facilities from uploading assignments and sharing resources to forums and chat. Students can see their grades and raise doubts with their tutor. Moodle offers both synchronous (real time) communication (e.g. chat) and asynchronous (delayed) communication e.g. message boards. The two modes of communication promote both immediate and delayed interaction with other course members and tutors. Other platforms are available for teacher training courses. However, they tend to offer the same features and tools as Moodle.

### **On-line Learning**

As important as technology is, it will not in itself promote learning if it does not offer new ways of, and insights into, interacting with content. Whilst on-line content may well be similar to that found in a traditional classroom, the learning methodology ought to offer learning experiences that respond to course participants' individual needs especially in terms of peripheral and unintended contextualised learning. On-line learning should allow participants to take charge of their own learning which I discuss in terms of deliberate, incidental and independent learning.

Deliberate or intentional learning involves following the stated aims and objectives of a course and success is measured in terms of satisfactorily

completing course content. Hatch and Brown define 'intentional learning as being designed, planned for, or intended by teacher or student' (1995, p. 368). The underlying problem with deliberate or intentional learning is that, in the case of vocabulary for instance, students may not learn enough words in the classroom to meet their communicative and/or academic needs. Paribakht and Wesche note that 'direct vocabulary instruction cannot account for a significant proportion of the words learners acquire' (1997, p. 175). Depending on their communicative needs, fluent language users may need up between 15,000 and 20,000 words in the target language. Hatch and Brown argue that fewer words are learned through direct learning than through incidental learning. If this is indeed the case, incidental learning may offer advantages over intentional learning with regards to online courses.

Hatch and Brown loosely define incidental learning 'as the type of learning that is a byproduct of doing or learning something else' (1995, p. 368). Incidental learning assumes that students learn by being exposed to language that is not an integral part of the course content. Nation closely associates context with incidental learning, arguing that 'Incidental learning via guessing from context is the most important of all sources of vocabulary learning' (2001, p. 232). Examining current teaching methodology towards vocabulary learning, Coady concludes that 'the vast majority of these words have been learned through context rather through direct instruction' (1993, p. 16 - 17).

However, incidental learning should not just be seen in terms of learning vocabulary. Thornbury argues that incidental learning also comes about through carrying out tasks and understanding instructions:

*This often takes the form of **metalinguage** – that is, the language that is used to talk about language. Grammatical items such as verb, preposition, present tense and linker are examples of metalinguage. So, too, are functional terms, such as inviting, refusing, apologising and complaining. Understanding task instruction language (sometimes called **process language**) is particularly important for learners working without the assistance of a teacher (2002, p. 43).*

With regards to overall reading skills, incidental learning has been investigated as to whether it effectively aids academic and communicative abilities such as 'the subskills of summarizing a text, finding the main idea, identifying rhetorical structures in a text' (Coady 1993, p. 5).

Whilst Coady and Nation argue direct learning should lay the foundations for subsequent incidental learning, this paper examines whether on-line students themselves engage in incidental learning and how useful they feel it is. Given that the study involves teacher training courses, the teachers themselves should be in a strong position to reflect on whether the course has produced opportunities for incidental learning.

Whilst technology and vocabulary development is the focus of current research, Martinez and Schmitt argue that 'formal research into the effect various technologies have on vocabulary acquisition is still in its infancy' (2010, p. 1). In a special issue of *Language Learning & Technology*, approaches to vocabulary

learning are examined through the use of video (Sydorenko 2010), electronic games (deHaan, Reed, and Kuwada 2010) and mobil phones (Stockwell 2010). Incidental learning and technology has been examined by Yoshii (2006) in a multimedia environment. However, the effect of independent vocabulary learning on on-line courses appears to be a less researched area.

### **Research Methodology**

Given the lack of research into technology and teacher training courses in Mexico, I attempt to understand how teachers perceive the use of such technology. To examine whether on-line courses promote individual learning, this paper sets out to answer the following research question:

Do on-line courses promote independent, incidental and unplanned learning?

If on-line courses do indeed enhance individual learning, they would enjoy a distinct advantage over teacher-controlled classroom teacher training courses. To further explore this overarching question, teachers were asked through the use of questionnaires to reflect in general terms on whether they engaged in incidental and independent learning during on-line courses. In a second questionnaire, teachers were asked to consider specific categories of incidental learning. Data collection took place on-line and respondents could answer in English or Spanish.

Data were processed and analyzed by, first of all, examining how the participants reflected on their overall learning in terms of planned and unplanned learning, incidental and independent learning. Given the qualitative nature of the study, I wanted to understand whether participants thought they took charge of their own learning. In the second stage of the analysis, I focused on the specific strategies and techniques participants employ when engaging in incidental learning.

1. To investigate whether they engaged in incidental learning, teachers were asked the following questions in the first questionnaire (see Appendix 1):
2. How useful is the course in promoting independent learning i.e. being able to learn on your own?
3. How useful is the course in promoting deliberate learning i.e. learning course content?
4. How useful is the course in promoting incidental and unplanned learning i.e. learning extra or additional information that is not the main focus of the course?
5. How do you feel your learning is progressing? Do you feel comfortable / challenged / frustrated etc. with your learning?

Whilst subjective in nature, these questions asked course participants to look beyond course objectives and reflect on their own learning processes and achievements. The first question asks whether the teachers feel comfortable learning on their own or whether they need the face-to-face contact of the traditional classroom. The second question asks whether participants feel they are learning what they ought to be learning i.e. achieving the course objectives. The third question asks participants to reflect on whether their learning reflects

individual needs and interests. Finally, course participants evaluated their overall learning.

The second questionnaire (see Appendix 2) focuses on the strategies and techniques participants employ when engaging in incidental learning. Questions 1 to 4 asked teachers to reflect how they negotiate new words e.g. in terms of guessing from context and whether they actually remember new words. Questions 5 to 7 investigated the strategies participants employed when they came across new vocabulary e.g. ignoring the word or looking it up in a dictionary. Finally, questions 8 to 12 asked participants to determine which language skills had been strengthened and whether these skills had increased through incidental language e.g. reading instructions and teacher feedback.

Whilst participants' answers are difficult to quantify, their observations and perceptions may increase the face validity of on-line programmes and point towards levels of learner satisfaction with such training courses.

In attempting to understand whether on-line courses promote incidental and independent learning, I could have approached the problem by trying to quantify individual vocabulary learning and produce a 'statistical digest of ... responses (Cameron 2001, p. 14). However, given the difficulties in trying to 'measure' such learning and analyse 'the relationship between variables' (Denzin & Lincoln 2000, p. 8), I adopted a qualitative approach which attempts to identify 'the intentions, beliefs and propositional attitudes' of teachers (Scott & Usher 1999, p. 4). Qualitative research is interested in identifying patterns and practices and providing insights and understandings. Such an approach allowed me to examine whether the course participants felt that they had benefited from incidental learning.

## **Participants**

As I was grappling with the question regarding whether on-line learning courses promote incidental and independent learning, the two groups (MA in TEFL and an in-service course for university language teachers) in my university provided an 'opportunity sample' (Brown & Dowling 1998: 29) to gauge course participants' perceptions of their own vocabulary learning. The results do not reveal substantial differences between the two groups because teachers shared the same profile in terms of age, language level, professional context etc. Course content provided different learning experiences in terms of incidental and independent learning.

All the participants in the study were experienced university language teachers either studying for an MA or undertaking a teacher training proficiency course. There were five teachers studying for their MA and 20 teachers studying on the proficiency course. All the teachers studying for their MA participated in the study along with 13 teachers studying on the proficiency course. The teachers are all Mexican and between 25 and 55 years old. The respondents were equally divided between women and men. The participants in this study have all been given pseudonyms in order to provide them with anonymity.

The teachers studying for their MA were contacted in the middle of their second semester, after two months of study, when they were studying a module on language description. They reported no problems using on-line technology. Students followed a programme, uploaded their work and received their grades on the Moodle platform. Most of the course content, which consisted of authentic readings, was on the Moodle platform. Sometimes students had to find some of their own sources.

The teachers studying on the proficiency course had studied for two months when the research took place. Their learning platform was similar to that of the teachers studying for their MA. All their readings, which were authentic, could usually be found on the platform. For teachers studying on the proficiency course, it was their first time using on-line technology and they had been given a short explanatory course on how to use the platform. The platform had a 'Doubts' link, which was also connected to the tutor's e-mail account, through which they could ask for clarification and extra assistance. Furthermore, course participants could ask for technical help at the self-access centres that were located on their respective university campuses.

## **Findings and Results**

### ***Independent Learning***

In response to Question 1 in which participants were asked to reflect on whether the course had fostered individual learning, both groups of teachers emphasised the need to take responsibility for one's own learning. This view was captured by Luz Maria, a teacher studying for her MA, who said: 'The course definitely promotes independent learning since there's nobody directly teaching or explaining the content. It is us who seek for the material, read, analyze, reflect and write the essays and learn.' Whilst finding relevant sources had been a considerable challenge on both courses, participants generally agreed that searching for such sources added a more personal dimension to the learning process. This view was expressed by Lucio, a teacher studying on the proficiency course, who asserted that '... the only problem is the struggle to find the resources sometimes, but other than that I think it is a good challenge for all teachers working by ourselves that makes it more interesting and more personalized.'

Another recurring problem was both the physical and psychological distance from other students as expressed by a teacher studying for his MA, Pedro, who reported: 'For me it has been difficult since the isolation is real. I have the companion of my classmates; the point here is that they are not in real time connection.'

Numerous advantages were highlighted by the respondents including freedom and flexibility in managing one's own time and increased self-esteem because, as Raul, a teacher studying on the proficiency course, reported: '*Es muy bueno porque te das cuenta de lo que eres capaz*' ('It is very good because you realize what you are capable of doing').

### **Deliberate Learning**

Respondents did not report any decrease in the degree of deliberate learning on the on-line course and felt that it was same as that of the conventional classroom. Some course participants went further and said that the on-line mode gives students time to reflect on course content, especially with regard to one's own teaching context, and to work at one's own pace. Marta, a teacher studying for her MA, argues that on-line may actually enhance deliberate learning: 'All the activities we have made, forum interactions, illustrations and reflections have being very useful to gain and achieve the purpose of the module by promoting a conscious learning'. Meanwhile, Alejandro, a teacher studying on the proficiency course, asserted that deliberate learning took on another dimension in on-line courses: 'I manage different types of learning according to the way I learn, because, now I take into consideration that I am multi task.'

### **Incidental and Unplanned Learning**

All respondents were aware of the incidental and unplanned learning that took place whilst they were studying. Alvaro, a teacher studying on the proficiency course, felt that on-line courses encouraged incidental learning 'because when the tutor suggests some readings, we can always follow some links or references to obtain more information even when is not related to the main topic.' Meanwhile, Samuel felt that on-line courses expected more from students: 'This course demands more than the readings and the assessments. Requires a deep study of the topics we're learning at the moment, it means extended readings.'

Marta went as far as to say that it is 'part of the online learning process to acquire and expand your resources in a way to better understand the content of the main course.' Luz Maria claimed that incidental learning was an important aspect of on-line courses:

*I would say that incidental learning is a consequence of this kind of learning model. Since we have to look for the material if it is not provided or for extra material, this means reading different authors ....; so there are a lot of possibilities to find additional information that sometimes results more useful than the bibliography provided. This is due to the amount of information presented by the author, the point of view, the complexity some authors write with, and other details.*

At the same time, Pedro underscored one of the disadvantages of incidental and unplanned learning in that 'sometimes they distract us a little since we are in a hurry trying to upload the essays in time. In my case, when I have some free time I go back to those subjects.'

### **Perception of Individual Progress**

Whilst they all felt that were progressing on the on-line courses, respondents also pointed out the demands and frustrations they faced. Time management was one of the most important challenges because 'sometimes time runs out' (Alejandro) and because of 'the short time to read' (Karla, a teacher studying for her MA). Brenda, a teacher studying on the proficiency course, had another take on time: 'I'm not paying too much attention to grammar and reading skills and so on. But

I sure lose track of time when I'm working on tasks because I'm really enjoying this.' Difficulty in finding the relevant bibliography was also often mentioned as one of the frustrations of undertaking an on-line course. For instance Luz Maria commented 'The negative side is that sometimes the recommended bibliography is not available and the extra material is not as useful as expected...'

Respondents frequently reported that they went through a range of emotions when undertaking assignments. Lucio said that 'I feel very comfortable but challenged at the same time and sometimes frustrated'. Berenice, a teacher studying for her MA, expressed the same sentiment: she felt comfortable, challenged and frustrated at the same time:

*To be honest, I think I have and keep having a mixture of those feelings in each assignment. That is, sometimes I feel comfortable with the topic and I find it easy to express my ideas, I sometimes feel frustrated since there are topics I do not have an in-depth knowledge of and in each assignment I feel challenged since there is something that creates the need in me to keep reading and analyzing in order to give a better analysis each time.*

### **Vocabulary Learning**

All the respondents said that they had learned new words on the on-line course although there was a marked difference between the achievements of proficiency course teachers who stated that they had learned between 11 and 30 words and MA students who reported that they had learned over 50 words. Alvaro said that 'I think that this course has helped me in acquiring more academic vocabulary and to discipline myself on reading' whilst Samuel said 'the course has helped me to increase my vocabulary related to methodology.'

Most teachers said that they could guess the meaning of new words which they claimed led to actually learning the word. Successful guessing was mainly achieved by respondents relying on their own schemata i.e. personal experiences and knowledge of the world.

The vast majority of participants said that they did not ignore words with unknown meanings. Their reasoning is summed up by Berenice who argued that 'I believe that a word can change the intended meaning of a sentence or text, so if I ignore it I might understand something different...' Her argument runs contrary to contemporary teaching practice which claims that EFL users should not try to understand every word.

When going beyond guessing and finding out the meaning of words, respondents said that they consulted dictionaries particularly those on the internet. They reported learning a wide variety of metalanguage including *aphasia*, *chunks*, *dichotic*, *drills*, *jig-saw activities* and *utterance* and compound nouns such as *information gap*, *reasoning gap activities* and *peer observation*. More significant was the range of general vocabulary words that teachers said they learned including: *abide*, *approach*, *acknowledge*, *aging*, *attrition*, *attainment*, *commonsensical*, *comprised*, *concealed*, *drawbacks*, *due*, *enhance*, *hinterland*, *myriad peer*, *subsumes*, *utmost* and *wintry*.



### **Incidental Learning Achievement**

When asked specifically about what they had learned through incidental learning, respondents went well beyond vocabulary. Teachers reported that their grammatical knowledge and reading skills had increased significantly along with their ability to assimilate new information. A sizeable majority said that the course had increased their perception of reading as an enjoyable activity.

Respondents reported that course content was not the only way through which they had increased their reading ability and vocabulary skills. Most teachers said that they had increased language knowledge and linguistic ability through reading instructions and explanations and, to a lesser but still important degree, from feedback or contact with tutor.

As to whether they had developed their knowledge of vocabulary, grammar and reading more through seeing language used in context than through the deliberate study of language structures, respondents were equally divided. Perhaps Alvaro sums up a common view:

*At this point, I think that I can assimilate better by reading, by the context. Sometimes when I find a new word, I usually assume the meaning by the context and if I have to use the dictionary I just go ahead and check it.*

Teachers, more often than not, combined seeing language used in context with the deliberate study of language structures.

### **Data Analysis**

The two on-line courses altered teachers' perceptions towards learning as they participated in novel modes such as forums and chats. In terms of course content, incidental and unplanned learning resulted in teachers, on an individual basis, being able to notice those aspects of the course that held a special interest for them whether it was new vocabulary, enhanced reading skills, increased familiarity with the structure of academic texts or learning new information. On-line courses appeared to promote more independent learning and allowed course participants, to a certain degree take charge of their learning.

In specific terms, on-line learning gave teachers opportunities to build up a large quantity of vocabulary through incidental learning. However, it remains to be seen whether new technologies such as on-line learning can help students reach a target of 15,000 - 20,000 words. The teachers studying on the proficiency course were only reporting an increase of 11 to 30 words during two months of study. Given that teachers were using authentic readings and none of the respondents were near-native speakers, the rate of learning new vocabulary as perceived by the respondents themselves may not have been sufficient to achieve advanced fluency levels and direct pedagogical help may be required. For example, respondents said that they often used their own schemata and external sources such as dictionaries when coming across a new word. But few teachers reported employing their existing linguistic knowledge e.g. understanding of synonyms and antonyms when negotiating new vocabulary. Therefore, teachers may need direct intervention from a tutor or traditional classroom teacher in

order to activate linguistic resources. On the other hand, it might be argued that the respondents were undertaking teacher training courses (rather than English-language courses) and therefore the teachers would not have been expected to learn new vocabulary.

It is important to note that vocabulary learning is only one of the benefits of on-line incidental learning. Teachers increased their negotiating skills and their ability to guess the meaning of new words. The teachers' assertion that correct guessing resulted in learning the word reinforces arguments in favour of incidental learning. More importantly, from engaging in incidental learning, teachers appeared to question the existing status quo and develop their own learning strategies. This was evident when respondents said that they did not ignore every new word they came across. More importantly, teachers appeared to be aware of their own learning processes. For instance, Alvaro said: 'At this point, I think that I can assimilate better by reading, by the context. Sometimes when I find a new word, I usually assume the meaning by the context and if I have to use the dictionary I just go ahead and check it.'

The case for incidental learning is reinforced by teachers' comments that instructions, explanations and interaction with the course tutor increased their language ability. Whilst this may also be the same case in the traditional classroom, on-line students seem to have developed a greater awareness of these sources of new language and vocabulary.

## Conclusion

In answer to the research question as to whether on-line courses promote independent, promoting incidental and unplanned learning, the answer is a cautious and tentative yes. However, it remains to be seen whether this results in sufficient progress for students to achieve advanced communicative or academic levels without deliberate learning.

Whilst it is difficult to quantify incidental learning, all respondents felt they had benefited from unplanned learning. These courses appear to give students a real sense of progress in terms of enhanced reading skills, and increased familiarity with the structure of academic texts. In the final analysis, if students feel that the more they invest in a course of study the more they get out of it, then on-line courses may be a powerful motivator for students and teachers to further increase their knowledge and use of English.

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