# Cognitive Apprenticeship Elements in Industrial Training Context: English Language Curriculum Planning Perspectives

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**Abstract:** International Islamic University College Selangor, Bandar Seri Putra, 43000 Kajang, Selangor, Malaysia. The practice of conducting Industrial Training (IT) at tertiary educational context is to foster the university and industry linkage. However, critiques on the need for university curriculum to align itself with the demands of the professional workplace needs are rife. The purpose of this study is to examine the elements of Cognitive Apprenticeship Theory (CAT) that complemented the IT contexts with relevance to the English language curriculum planning processes. As an exploratory case study, it construes that the IT context and CAT elements, anchored in Vygotskian Zone of Proximal Development (ZPD) theory are complementary. This mixed method study employed survey questionnaire and interviews and the results were analysed using descriptive statistics. The findings revealed that the Method domain of CAT which consists of modelling, scaffolding, fading, coaching, articulation, reflection and exploration is inherent in IT context. The study concludes that the language curriculum developer has to seriously consider the process of defining the IT context as "environment" which from CAT perspective encompassed of lesson content, the pedagogical approaches, the arrangement of activities promoting learning and the sociology of learning.

**Key words:** Language curriculum planning, cognitive apprenticeship, educational theory, university-industry linkage, Zone of Proximal Development (ZPD)

## INTRODUCTION

In language curriculum planning, the process of defining the contexts or also known as environment analysis influences the overall processes in curriculum development (Graves, 2008; Said, 2014, Said *et al.*, 2015). The Industrial Training (IT) phase of tertiary education is akin to apprenticeship in Vygotskian 'Zone of Proximal Development' (ZPD) (Vygotsky, 1978) theory because it provides a rich ground for cooperative learning.

Based on the Department of Statistics, Malaysia in 2010 16.7% of the total unemployed labour comprised of 65,500 graduates and in 2015 Jobstreet.com conducted a survey among the employers which pointed that 64% of the unemployed graduates have poor command of English. Therefore, the present study argues that the IT phase of tertiary education should be analysed within the ambit of Cognitive Apprenticeship Theory (CAT) (Brown *et al.*, 1989) from language curriculum planning perspectives. Not only IT offers a rich interrelated

clusters of knowledge, skills and attitudes, it is a phase that could help in reconciling the gap between English language instruction and real-life english language needs of the apprentice in the IT context, the elements of CAT could shed some light on the teaching learning symbiosis that occur during this practicum experience. This study revolves around CAT that views "environment" as comprising "the content being taught, the pedagogical methods employed, the sequencing of learning activities and the sociology of learning" (Brown *et al.*, 1989) that students would be exposed to during the industrial practicum or apprenticeship period. As the study takes the stance that IT could have a significant impact on English language curriculum planning, one particular CAT element, i.e., the method domain, bounds the study. Due to time limitation, the master's role in different IT contexts becomes the focus of the study.

As CAT is grounded in ZPD (Vygotsky, 1978) theory, the justification to investigate the master's role also corroborates the definition of ZPD as the distance

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between the actual development level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more able peers (Vygotsky, 1978). Hence, the present study endeavours to identify elements of CAT as observed by the master, i.e., supervisors throughout the apprenticeship phase. The impetus of this study is that there is a lack of research on the influence of IT context in planning a language curriculum. This exclusivity is baffling as the practicum phase is compulsory in Malaysian tertiary education system and thus negates the findings made by previous research such as a language curriculum does not function in isolation but within its socioeducational contexts 1 or contexts that address societal, institutional and professional requirements (Said, 2014; Said et al., 2015). As this is a mixed method study, the findings have been analysed using a descriptive statistics. Hence, the purpose of this study is to examine the elements of CAT that complemented the IT contexts with relevance to the English language curriculum planning processes. The main research question which guided the study is: What elements of CAT that students acquire from IT from the perspective of the Supervisor?

## Literature review

**Bridging Industrial Training (IT) and language curriculum planning:** In Malaysia, the Human Resources Development Fund (HRDF) oversees the implementation of the IT scheme. According to its information kit available at its website the main objective of this scheme is to provide an exposure to an undergraduate to the working environment so that he or she will gain working experience before getting employed. HRDF also highlights that the scheme serves a purpose for the employers to get skilled workers in the future. Investigations on the demand for Malaysian universities to address the contribution of English language proficiency to the growth of quality knowledgeable and employable graduates is becoming noteworthy (Kassim and Ali, 2010). On the other hand, other studies on university apprenticeship scheme do not explicitly highlight its relations with English language skills but label the English language skills under generic skills and knowledge (Yunus and Yasin, 2014) or life-long learning and social interaction skills (Bates et al., 2007) instead. In another apprenticeship context that specifically combines training and education to cater to the funding agencies, it is revealed that academic and professional goals must be achieved simultaneously by the language curriculum (Said, 2014; Said et al., 2015).

**The nexus of Industrial Training (IT) and cognitive apprenticeship:** In general, literature on IT addresses the importance of support from trainers or masters (Ridzwan and Ruhizan, 2015; Yunus and Yasin, 2014; Bates et al., 2007; Jeske et al., 2016). For instance, Bates, Bates and Bates state that "supervisors serve as role models and provide a template for behaviors expected of a professional worker that could assist the students to meet the competency required at the workplace" (Bates et al., 2007). Recent studies however are positing that support for trainees could also be in the form of computer-mediated programs (Yunus and Yasin, 2014) and student mentoring programme (Bates et al., 2007).

The present study maintains that the Method domain of CAT7 is intrinsically prevalent in the IT literature (Ridzwan and Ruhizan, 2015; Yunus and Yasin, 2014; Bates et al., 2007; Jeske et al., 2016). This domain comprises six teaching methods that are categorised into three groups; group one modelling, coaching and scaffolding, group two articulation and reflection and group three exploration. Group one specifically outlines the role of the master in guiding the apprentices to acquire a unified set of cognitive and metacognitive skills through observation processes and of directed and supported practice. Group two and three could only materialise when the apprentice has achieved some maturity after an immersion of the professional setting. In a nutshell, the method domain of CAT contributes to the fundamentals of most studies on IT.

## MATERIALS AND METHODS

**Participants:** The IT supervisors involved in the study are of various private and public sectors. From the gatekeeper at the faculty, the researcher obtained a list of 58 interns and 25 host companies of which 22 have been contacted to invite their participation in the research. Three companies had been excluded because one is based in Japan and the other two had given contact numbers that are not in service. As for interview sessions, three Supervisors volunteered. All of them are Malay and they identified Malay as their first language and English as their second language.The have had many years of supervisory experience.

**Industrial Training (IT) practice:** It is the practice of every faculty at Universiti Teknologi Malaysia (UTM) to send off the final year students to their practicum training. Students have the option of choosing the host company and the next step is to fill in the form PSMB/ITS/1/088 and attach the necessary documents to be approved for their

training. Selected undergraduate students at MJIIT will have the opportunities to do part of their IT or attend some courses in Japan. Some of the reasons behind their choice of host company would be accessibility, the company's relation with the faculty, the supervisor's familiarity with intern's fieldwork experience and the company's brand. It is during this period of time where all students are expected to switch role as apprentices or interns and work alongside the more experienced workers. The normal practice for a few host companies is the human resource unit will conduct an orientation week for these apprentices. During this time, they are furnished with general information on work routine and office administration as well as specific instructions such as Standard Operation Procedures (SOP) for factory context.

**Instruments and procedures:** The survey questionnaire was adapted from Kassim and Ali (2010) and used as instrument to identify the elements of CAT from the perspectives of the supervisors. The questionnaire was divided into two sections; demography and workplace English language use. The latter section was divided into two sub-sections; trainee's language use and supervisor's language support. The questionnaire was constructed using the google form application which yielded a link that was emailed to 22 Supervisors who initially agreed to participate in the study. After one month of getting their responses, the researcher assuming the role of interviewer acted as the instrument in collecting the qualitative data. Three respondents labelled 1PNC (Private National Company), 2PNC and 1GBNC (Government-Based National Company) had consented to be interviewed on the assurance of anonymity.

## RESULTS AND DISCUSSION

In order to answer the research question, descriptive statistics of the selected findings from the quantitative data are presented as follows (Table 1-12).

**Company background:** Most of the companies (44.4%) identify themselves as private multi-national companies. Within these, the language use is found to be geared more towards english. Local companies are discovered to prefer the use of the local vernacular. Only one company is from the government based national company category.

**Internship at the companies:** Although, all the companies are venues for practicum, only 88.9% of them indicate that internship at their companies is welcome. In an interview with 1PNC, it is learned that short-term internship is not

practical and they prefer a longer period for effectiveness of internships and better time use on training. Interviewee

Table 1: Type of company (N = 9)

| Items | Percentage |
|---|---|
| Private multi-national company | 55.6 |
| Private national company | 33.3 |
| Joint-venture multi-national company | 11.1 |

Table 2: The company's openness to interns or participation in apprenticeship programmes (N = 9)

| Items | Percentage |
|---|---|
| Yes | 88.9 |
| No | 11.1 |

Table 3: The company's medium of language (N = 9)

| Items | Percentage |
|---|---|
| English | 88.9 |
| Malay | 88.9 |
| Mandarin | 0.00 |
| Tamil | 0.00 |
| Others. Please specify: Japanese | 11.1 |

Table 4: The frequency of English language usage in company's normal routines (N = 9)

| Items | Percentage |
|---|---|
| On a daily basis | 44.4 |
| On occasions involving outsiders | 55.6 |
| During events involving speakers of other languages | 66.7 |

Table 5: The expectancy of trainees to use English in their tasks (N = 9)

| Items | Percentage |
|---|---|
| Yes | 88.9 |
| No | 11.1 |

Table 6: The areas in which trainees are expected to use English (N = 9)

| Items | Percentage |
|---|---|
| Listening to instructions | 55.6 |
| Receiving information in meetings | 44.4 |
| Presenting | 77.8 |
| Reporting on tasks | 66.7 |
| Speaking in formal situations | 77.8 |
| Speaking in informal settings | 44.4 |
| Reading instructions | 66.7 |
| Writing proposals/reports | 88.9 |
| Writing research papers | 55.6 |

Table 7: The trainee's difficulty in using English (N = 9)

| Items | Percentage |
|---|---|
| Yes | 66.7 |
| No | 33.3 |

Table 8: The aspects of language difficulty encountered by trainees (N = 9)

| Items | Percentage |
|---|---|
| Vocabulary | 55.6 |
| Grammar | 55.6 |
| Sentence structure | 22.2 |
| L1 interference | 44.4 |
| Communication | 44.4 |

Table 9: The choice for trainees to use an alternative language (N = 9)

| Items | Percentage |
|---|---|
| Yes | 77.8 |
| No | 22.2 |

Table 10: The roles of superiors in improving trainee's language competency (N = 9)

| Items | Percentage |
|---|---|
| Using simplified language | 77.8 |
| Varying language input to assist understanding | 11.1 |
| Code switch (changing to other language) | 11.1 |
| Code-mix (using a blend of English and other languages | 44.4 |
| Expect trainees to use English | 33.3 |

Table 11: The superior's use of English as an example for the trainees to emulate (N = 9)

| Items | Percentage |
|---|---|
| Yes | 66.7 |
| No | 33.3 |

Table 12: Steps taken by trainees to improve their language competency (N = 9)

| Items | Percentage |
|---|---|
| Taking language courses | 0.00 |
| Attempt to use the language | 44.40 |
| Engage in conversations | 100.00 |

1PNC mentions that short-term internships are a waste of training as the intern would not benefit from the intended range of practical training. The company also expects certain amount of contribution from the trainees after a few weeks and a short period of training denies them that. As such, trainees who serve a longer period of time are often given special projects.

**Interviewee 1PNC:** Students who are here for 5 or 6 months sometimes have their own project. We call it 'mini project' (translated from Malay).

**Language use:** On the usage of English as the medium of communication, most of the companies (66.7%) use it only when dealing with speakers of other languages. The 55.6% mention occasions involving outsiders as reason for the English language to be employed at their companies. But usually the use of English among the interns is limited to communication with their immediate superiors.

**Interviewee 1PNC:** Their only contact person is (the) internship supervisor so they only (speak to those with whom they are) attached for example pharmacists, they engage in production department or QA then they should communicate with their quality assurance department so they engage with that people just internal people.

The trainees are expected to use English most of the time. The 88.9% of the companies agree to this in the questionnaire. However, the interviews reveal otherwise. Being in a Malay-dominant company limits the need for English.

Interviewee 1PNC mentions that English is only needed during laboratory work and when external supervisors visit for observation purposes. Interns would then be required to report in English to the supervisors. Companies with foreigners serving as superiors have a higher expectation on trainees to use the English language. Interviewee 1PNC also named certain universities and the varying demands on English usage. Some accept code mixing while others expect English to be used. Another area that shapes the necessity of English usage is the idiosyncratic course or programme that the interns are from. Interviewee 1PNC named engineering, chemistry and pharmaceutical as requiring more English use as compared to human resource courses. English is used more in the productive skill of writing. The finding shows that writing proposals or reports is the most common task where English is required. Speaking in formal situations and presentations both at 77.8% are the next in importance when the language is required. Only four of the companies require the interns to use English to receive information during meetings.

Almost one third of the respondents say that the trainees face difficulty in using the English language. While vocabulary and grammar are acknowledged as being the crux of the problem of English language usage (55.6%), mother tongue or first language interference is the next crucial problem as indicated by 44.4% of the respondents. Interviewee 1GBNC expresses her concern over the presentation skills of the interns where they are able to present using prepared slides but are not able to respond to questions which are often impromptu.

**Interviewee 1GBNC:** They prepare things like saying Good Morning and the normal routines. But they fail miserably during Q and A. This is because of poor vocabulary, being shy. We also couldn't help them much. We encourage them to read on their own to improve their proficiency and increase confidence level. To prove this point, 1GBNC mentions that reference books and journals as well as the Internet are often written in English and interns would regularly be referring to these at the workplace.

Only a mere 22.2% deny the use of alternative languages by the interns. To the majority of the companies, it matters little if interns use their vernacular. The interview sessions reveal the reason behind that to be the Supervisors and co-workers having similar language capabilities and issues.

It is found that the Supervisors at the companies do attempt to assist the trainee's language competency. A majority of them choose to use simplified language to ease communication (77.8%). A strategy found applicable in doing this seems to be code-mixing where the English language is blended with the vernacular. Code-mixing is

preferred over code-switching as the latter would still entail a certain level of mastery over the second language. The supervisors also set an example by using English when communicating with trainees. The 66.7% claim to do so although the interview reveals this to be the case when the employers are foreign. Among the efforts include immersing the trainees in the language. One way that all of the respondents agree to be effective is to engage the trainees in conversation. The interview sessions show that most of the time it is the individual effort of the interns that could improve them. Nevertheless, all the respondents agree that training received at the companies is adequate to equip the trainees with the knowledge needed in the real working world.

## CONCLUSION

The current study attempted to identify the elements of CAT as observed by the masters, i.e., supervisors throughout the IT or apprenticeship phase and relate the elements to English language curriculum planning. As shown by the findings, these supervisors are adult individuals with different professional backgrounds and ideals. To their trained eyes, the apprentice's struggle with English at the workplace did not go unnoticed. Therefore, the master's contribution to the development of language curriculum would be their consideration in promoting "learning" be it with the guidance of the experienced others, peers or self. Rightfully, these master's philosophy of learning echoes Vygotskian ZPD which supports the notion of Supervisors having the template for apprentices to emulate to be competent members of the professional workforce (Bates *et al.*, 2007; Jeske *et al.*, 2016). To further achieve this goal, a language curriculum developer has to seriously consider the process of defining the IT context as "environment" which is viewed by CAT as comprising of lesson content, the pedagogical approaches, the arrangement of activities promoting learning and the sociology of learning (Brown *et al.*, 1989).

Further, research on language curriculum planning integrating the IT context is foreseen to involve more public and private training organisations of different disciplines for broader perspective and input. It is also recommended that researchers in the field of apprenticeship should explore and develop principles or framework which value pedagogical approaches or the template of the masters.

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