Inductive and Deductive Approaches to Teaching English Grammar

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Abstract

Adult learners' perceptions on inductive and deductive teaching approaches for English grammar were examined. The written performance of two student groups taught via an inductive and deductive approach, respectively, and created by random allocation was also contrasted. Specifically, the form, meaning and use of the past perfect were assessed on the day of explanation, and ten days later, using a reading text and practice and production exercises. Learners overwhelmingly preferred the deductive approach, but minimal differences between the inductive and deductive groups' performance were found, probably related to the underpinning use of local cultural contextualization while language teaching both groups. The study shows a deductive approach with terse explanations, and aided by the systematic use of concrete, meaningful examples during the procedure, particularly when drawn from a familiar local cultural context, is both successful and relates to learners' expectations. Teachers can therefore bring grammar 'to their notice' deductively, through rules and socially-relevant examples. However, tasks that promote grammar-noticing and consciousness-raising 'inductively' were generally shown to be as effective, and the inductive approach was used successfully if local contextualization was adopted. Importantly, teachers therefore need not feel constrained to predominantly use a deductive approach, assumed to be more suitable for non-BANA countries.

*Keywords:*British-Australasian-North American countries (BANA), contextualization, deductive and inductive approach, noticing and consciousness-raising, tertiary, secondary and primary educational sectors (TESEP)

Introduction

Baseline approaches to language teaching and learning: Inductive and deductive

Learners of English around the world may have different preferences for teaching approaches of grammar used in the English class, and possibly benefit to a different degree according to the approach in use. There may be a disconnect between what Western teachers perceive to be the most appropriate model of teaching, and the preferred and most effective ways in which the learning of English takes place. The aim of this study is therefore to contrast the use of inductive and deductive approaches while teaching English grammar among learners of English in tertiary, secondary and primary (TESEP) sectors around the world. These may often be in contrast to the approaches to language learning and teaching practised and promoted in Britain, Australasia and North America, i.e. BANA countries (Holliday, 1994).

Inductive teaching is a bottom-up approach that gives learners greater responsibility for their own learning. Grammatical rules are not given, and instead, carefully selected materials illustrating the use of the target language within a context are supplied. Learners must therefore 'induce' grammatical rules from such experiences of language in use. Language rules are induced from carefully graded exposure to and practice with examples in situations and substitution tables (Gollin, 1998). Students therefore discover, with varying degrees of guidance from the teacher, the target language and induce the rules themselves. Harmer (2007) states that learners "try to work out how it is put together, [and is particularly useful] where language study arises out of skills work on reading and listening texts" (p.207).

Deductive teaching involves the use of metalinguistic information presented explicitly by the teacher to the students at the onset of the lesson. This generally involves the provision of specific language rules, demonstrating how the new structures are formed and a breakdown of their components, and illustrating the type of contexts where they can be used (Al-Kharrat, 2000). Language rule input is therefore, in the first instance, supplied by the teacher in a systematic and logical manner, often through the use of grammatical terminology. Successively, learners are exposed to examples showing the meaning and use of the new grammatical structures, and then asked to create similar new sentences (Gollin, 1998). Harmer (2007) stated that these "Explanation and practice sequences are usually PPP-like" (p.203), where PPP refers to the present, practice and produce method, and where students learn in linear, step by step sequences.

Teaching methods in relation to teaching approaches

Inductive and deductive approaches form the basis of well-known teaching methods: for example, grammar translation and cognitive code teaching are deductive, while audio-lingual, silent way, and total physical response are inductive (Krashen & Seliger, 1975). Communicative language teaching is also essentially inductive, based on functions and notions syllabuses, rather than grammatical structures (Richards, 2006). Both approaches are practiced in BANA countries, but the deductive approach is primarily and often exclusively used in TESEP learning environments. Yet TESEP is practised in BANA countries (essentially Kachru's inner circle) in addition to the outer and expanding circle countries, while 'BANA practices' can be found in the private language provider sector in TESEP environments (Macalister, 2011). For example in Egypt, placed within the expanding circle of English (Kachuru, 1985), education and language providers such as the American University in Cairo advocate the use of inductive practices

alongside with those having a deductive approach normally associated with TESEP countries (Mallia, 2013a).

Notwithstanding the different attitudes towards the role of grammar-teaching, Swan (2006) notes the post-Krashen view, namely that overt attention to language form is, in fact necessary, and effective when combined with opportunities for communication. Teaching via the (mainly inductive) approaches adopted in BANA countries enjoys great prestige worldwide, as opposed to the (mainly deductive) approaches used in TESEP countries, possibly because greater learner motivation and better understanding and retention of language have been said to be linked to it (Gollin, 1998). Of several widely-used course books, most therefore tend to use the inductive approach,, possibly attributable to the popular influence of consciousness-raising activities where learners progressively become aware of how the meaning and use of language and how it is formed; *Activate* and *Matters* made use of the deductive approach (Nitta & Gardner, 2005). Because the inductive approach for grammar teaching has been often unquestioningly considered to be superior for many years (Seliger,1975), teaching materials used and methodologies adopted are therefore often similar and used indiscriminately across BANA and TESEP scenarios worldwide.

Learners' and teachers' socio-cultural experience and effective classroom practices

Teachers of English are often made to operate with the assumption that good working practices, such as adopting one teaching approach over another, are equally effective worldwide, despite differences in local socio-cultural factors and the resultant ways of learning (Küçük, 2011). For example, in Indonesia a "model of grammar teaching through consciousness–raising activities involving the learners to identify and understand the grammatical point in context" (Roza, 2014, p.1) was used without exploring learners' needs and preferences, and no comparison of results to more traditional approaches was made. Conversely, a study in Sudan specifically explored local learners' language learning preferences prior to implementing classroom practices (Mallia, 2013b). Therefore fewer *a priori* generalisations should be made about any single approach being a suitable 'one size fits all', notwithstanding the large volume of literature about approaches adopted for teaching grammar globally, including Middle East countries such as Iran (Chalipa, 2013) and Saudi Arabia (Al-Kharrat, 2000). This should not be surprising as there are substantial differences, in fact, among learning and teaching situations around the world (Swan, 2006). But although an inductive approach is often universally assumed to be the better choice, in some TESEP countries a deductive approach may be more appropriate: it may be more time-effective, acknowledges local cultural perceptions on language learning, is appropriate for large class sizes, and comfortably accommodates the predominant exam-culture mentality that values accuracy through written testing (Küçük, 2011). For example, learners and local teachers in Egypt, Eritrea, Sudan and South Sudan preferred a more holistic strategy, balancing inductive communicative language learning taught via scenarios using a Western socio-cultural context with more deductive 'traditional methods' (such as focus on forms), and using a more meaningful local socio-cultural context (Mallia, 2014).

Teachers of English often accept without challenge assumptions of what constitutes good working practices for teaching approaches. However, practices as diverse as deductive teaching through explanation and examples, inductive discovery activities, rule learning, decontextualized practice and communicative practice, for example, should not rejected *a priori* on doctrinaire grounds (Swan, 2006).

There may therefore be problems associated with the assumption by one culture that ways of doing things and perceiving the world is the same for others; the purpose of this paper was therefore to:

(1) Examine qualitatively adult learners' perceptions on inductive and deductive teaching approaches for English grammar during a general English course in a TESEP environment;

(2) Evaluate quantitatively the written performance of two student groups from a TESEP community taught via an inductive and deductive approach, respectively. The following sub-research hypotheses were of interest:

(i) There is a difference between the 'immediate' restricted production of verbs in the past perfect between students taught via a deductive and inductive approach;

(ii) There is a difference between the 'immediate' free(er) production of verbs in the past perfect between students taught via a deductive and inductive approach;

(iii) There is a difference between the 'immediate' noticing of verbs in the past perfect in a reading text between students taught via a deductive and inductive approach;

(iv) There is a difference between the 'delayed' restricted production of verbs in the past perfect and past simple between students taught via a deductive and inductive approach;

(3) Determine qualitatively if using the inductive, deductive or both approaches was feasible for resident or visiting teachers in a TESEP community, considering local teaching perceptions (e.g. favoring the use of deductive approaches), or pressure from international dictates (e.g. favoring the use of inductive approaches).

Methods

Participants and course
Adult, police personnel (7 women and 43 men) from South Sudan, aged between 20-46, attending a 3-month general pre-intermediate English program, were included in this study. While their written competency was representative of their prescribed language level, their oral competency was relatively strong. This relates to the fact that English (together with Arabic) is spoken to varying degrees across the country. However, while fluency was adequate, accuracy was often lacking: for example there often was confusion between the uses of the present simple and present continuous. Language complexity and flexibility were also limited, for example there was virtually no use of the perfect tenses.

The past perfect was the specific new language item being tested, assessed through written output. This was a convenience sample, consisting of a group of 50 learners following a three-month general English course. The main pre-selection criterion was not having any oral or written competence with the past perfect, established by the course instructor (researcher) over the previous three months of the course prior to the start of the study. Twenty-six learners were randomly allocated into two groups of thirteen. No confounding variables (e.g. gender, age etc.) were solidly identified as being influential, and groups were therefore not matched for such

criteria as this could actually introduce bias, and possibly lessen the power of the study (i.e. ability to find significant differences). An additional twenty-four learners, the remainder of the same learning group, joined the second phase of the study. The course instructor was not from the TESEP community, and was raised and educated in a BANA environment, but familiar with local customs, culture and values through social interaction within this TESEP community.

The learners came from various tribes and were representative of the rural societies of South Sudan in terms of educational background and also social and cultural values. Many were bilingual, also using Arabic as a *lingua franca*. They were essentially group-centered people from rural, agrarian societies with a well-organized social structure and had people-oriented jobs. These are characteristics of field dependent (FD) learners, generally said to be inductive learners (Ebrahimi *et al*., 2013). Paradoxically, this group of learners clearly benefited from a deductive teaching approach as evidenced from the two-month familiarization period prior to the study. However, they also appeared to benefit from other teaching strategies associated with an inductive approach to teaching such as task-based learning, and techniques such as role-play, enactment, story-telling and other creative forms of language learning where learners had to 'notice', understand and apply new language in context. Over the three-month course leading to this study, the learners therefore were exposed to both approaches, although they appeared to prefer learning via (deductive) sequential progression, in-keeping with an authority-oriented learning style. They therefore enjoyed a structured environment, content to rely on the teacher's directions and explanations. Learners felt insecure when facts did not fit the schema, and preferred sequential learning, and somewhat disliked 'discovery learning'. This is possibly related to their employment within the police force, and routinely experiencing explicit training and briefing. This may explain their preference and comfort with a deductive approach from the onset of the course, through to the start of this study. Although this was a convenience sample, results can be extrapolated to adult South Sudanese, particularly as the social and educational background of the study sample is representative of the larger local population. Many analogies can probably also be drawn with other adult FD learners from rural TESEP societies around the world with a well-organized social structure and people-oriented jobs.

ESL learners in South Sudan routinely have the opportunity for practicing English fluency both during work and socially. But there was an emphasis on accuracy in this course, and this was not so much because English is unavailable, but grammatical forms and lexis in use in this society may be limited: for example the perfect tenses are rarely, if ever used. There may also be widespread and systematic confusion between grammatical meaning and use: for example the present simple is used instead of the present continuous, and vice versa. Swan (2006) stated that opportunities for bettering accuracy may be best brought about by "pedagogic intervention: explicit teaching and systematic practice" (p.7), and this was a major factor when considering the type of syllabus to adopt. The need for better accuracy was important to improve the police public image with the civilian public. Inaccurate speech is highly correlated with low levels of education, which constitutes part of the negative image many local police units are currently battling. Capacity (and image) building via the addition of accuracy to fluency of speech may greatly aid the police in counteracting this perception.

The syllabus adopted was guided by the use of an established series of course books, *New Cutting Edge* (elementary and pre-intermediate level) and followed the given sequence of language items, particularly grammar, but also lexis, pronunciation, discourse, and practice of

the four language skills. Modifications to the course book when delivering the syllabus content included (i) nesting of language in local cultural contexts, such as local customs and events, farming and agriculture practices, as the included Western contexts often distracted or confused, rather than enhanced language learning, (ii) supplementation tasks strengthening of students' accuracy, (iii) modification of lexis to suit cultural context, (iv) also presenting grammar via a deductive approach (the course book systematically uses an inductive approach), and (v) addition of specific tasks such as writing job-related letters, emails, and giving presentations were also addressed to allow access to other police-training activities using English as the language of instruction.

Measurements

Autobiographical data including that on age, gender, educational background, use of English, and preferred learning approaches for learning English grammar, was collected by administering a written questionnaire in English. Issues of validity (i.e. accuracy of learners' writing in reflecting their thoughts) and reliability (i.e. repeatability of questionnaire to different groups) may be a concern (Fink, 2003). Therefore oral instructions and clarifications were provided by the teacher to the learners as they filled in the questionnaire to ensure response validity, namely to ensure that learners fully understood the given options and made an informed choice. Both inductive and deductive groups were treated as one at this stage to avoid issues of reliability, and specifically the issue that different amounts of help might have been given to the participants when compiling the questionnaire. They were also kept as a single group when pre-teaching essential vocabulary (because/as/while/when), to further avoid reliability issues due to possible differences in the teacher's instruction method and amount of detail given. Lexis was taught via simple, locally-contextualized situations. For example, the use of 'because', and 'as' to show one action occurring as a result of another, with the causative (initial) verb in the past perfect, and the resultant (secondary) verb in the past simple was given (*e.g. The warriors were tired as/because they had practiced all day*). The use of 'as' for showing two concomitant actions (using both verbs in the past simple) was also illustrated (*e.g. Our neighbors waved as we walked by.)* The use of 'while' for showing two concomitant actions (using both verbs in the past simple) was also illustrated (*e.g. John dug furrows while George removed weeds.)* The use of 'when' for showing two concomitant actions (using both verbs in the past simple) was also illustrated (*e.g. People worked the river-side fields when there was no rain.)* The exclusive use of the past simple for showing a clear series of actions in the past where the sequence is intuitive was finally demonstrated (*e.g. The policeman picked the gun, opened it, and loaded the bullets*).

Both study groups had the similar written materials and tasks during the study and were instructed by the same teacher in one learning environment familiar to all the learners. Addressing the possible issues of validity and reliability also helped restrict differences between groups to solely the approaches under investigation, i.e. inductive or deductive. The materials consisted of: (i) a reading text containing target language with the context centered on aspects of local work, family life culture and activities that fully reflected the learners' simple daily experiences, given to both the inductive and deductive learning groups; a verb template to fill in with the past perfect in the positive, negative and question forms, based on language forms 'noticed' in the text for the inductive group; a printed hand-out that had the full conjugations in the past perfect of the verb 'to work' in the positive, negative and question form for the deductive group; brief notes to guide inductive group learners when discovering the concomitant

use of the past simple and past; 'immediate' controlled practice of the past perfect via a gap-fill exercise for the inductive, deductive groups, and 'delayed' controlled practice for the past simple and past perfect for the new, inductive, and deductive groups.

Procedure

The study aimed at testing the null hypotheses that there was no difference in the immediate and delayed written output between two groups of adult learners of English, one taught via a deductive and the other an inductive approach. The target language used for evaluation in both cases consisted was the past perfect and distinguishing its use with, and from the past simple. The inductively-taught group was set as the control group (inductive teaching represents the standard method in the course book), and the deductive group was the experimental group.

An initial assessment of the approximate sample size n (13 learners per study group) was established as detailed by Martin *et. al*. (1987). Using the convenience sample, namely drawing from the 50 available adult learners following a 3-month general English program, was therefore feasible.

In the first phase of the randomized comparative trial, twenty-six learners were randomly allocated into two groups of thirteen: learners were each allotted a number which were placed in a bag. As each number was drawn, the corresponding learners were alternatively allocated to the deductive group and inductive group. Each number tag was placed back into the bag after extraction to ensure that successive numbers had the same probability of being extracted (repeat draws were ignored and placed back). In the second phase, the remaining twenty-four learners of the total group of fifty formed the third group.

Experimental bias was minimal as variable information was collected via the research instruments in writing (e.g. gap-fill answers, closed questions in questionnaire etc.). The information was objective and did not require interpretation and evaluation. The independent variable was 'approach' (inductive, deductive), and the dependent variable was the correct or incorrect use of the past perfect and past simple.

Instructions for the inductive group commenced with learners reading a text. The context of the reading was created with aspects of work, family life culture and activities that fully reflected those of the learners. They therefore understood the meaning and use of verbs tenses via recognition of their own life-style patterns, e.g. '*The women had finished work in the gardens when the children arrived from school*', so clearly the past perfect is used for the verb that came first, and past simple for the second. This helped understanding the meaning for ambiguous cases, e.g. '*The farmer closed the gate' when I had got to the farm',* versus *'When I got to the farm the farmer had closed the gate', and using only the past simple when verb sequence is clear, e.g. 'The cattle entered the field and ate the crops'*.

Verbs included in the reading were those already covered during the course, namely the present simple, past simple, present continuous, past continuous and present perfect, and also those being brought to their notice in the current lesson, the past perfect. They then underlined all verbs, sorting them into categories, labeling those already covered during the course, and also

creating a category, 'new verbs', i.e. noticing and noting those in the past perfect. The learners were subsequently given a verb template to fill in with the past perfect in the positive, negative and question forms, based on language forms 'noticed' in the text. Learners were then guided by the teacher through the use of brief notes that helped them discover the concomitant use of the past simple and past perfect (with 'because' and 'as'), and the past simple alone (with 'while', or when the sequence of events is intuitive). The text itself provided examples for noticing. The learners then tackled a gap-fill exercise (practice), filling in the past perfect or past simple, and then also produced five 'real-life context' sentences (freer practice). Another task, where learners had to chose between the past perfect and past simple was done 10 days later, together with the deductive group and 'new group' of learners.

The instruction sequence for the deductive group started with exposure to a sequence where the general rules were given, followed by examples and ending in practice (Stern, 1992). Specifically, the lesson commenced with the use of a printed hand-out that had the full conjugations in the past perfect of the verb 'to work' in the positive, negative and question forms. The general rules for meaning and use for the present perfect (including scenarios where the past simple was to be used alone or with the past perfect) were illustrated through contextualized examples after a teacher-fronted demonstration on the rules for forming and using the verbs. Learners in the deductive group were then given a reading text (the same text given to the 'inductive group') where learners had to underline all verbs, creating categories according to the tense. Again, the familiar cultural context within which each tense aided the learners to illustrate the meaning and use of the verb tenses, in particular the use of the past simple alone or with the past perfect. The verbs identified as being in the past perfect were then categorized into the positive, negative and question forms. Like the inductive group, learners I the deductive group completed a contextualized gap-fill exercises followed by the production of 'real-life context' sentences of their own using the past perfect, and the other gap-fill 10 days later.

The following day, both groups (26 students) were joined by 24 other members of the class that had not participated in the first phase. They were placed into three groups according to the original (pre-study) placement at the start of the course. All classes continued to cover new items in the syllabus, generally with the use of richly contextualized scenarios and this also included exposure (mainly inductive) to the form, meaning and use of the past perfect and past simple. After ten days all 50 students were tested for the form, meaning and use of the past perfect and past simple through the use of a new gap-fill exercise.

Statistical analyses
Information on the variables of interest was collected on the first day of the study and included differences in the means between the deductive and inductive groups for the number of correct (i) answers for a gap-fill exercise, needing the formation of verbs in the past perfect; (ii) sentences formed using verbs in the past perfect, and (iii) verbs in the past perfect identified in the reading text. Differences between group means were analyzed through the use of Student's t-Tests. The level of significance used in the study (alpha level $\alpha=0.05$) was adjusted with the Bonferroni correction (Shouki & Edge, 1996) to buffer possible Type I errors due to having three multiple dependent variable (outcome) measurements on the same study population. A Type I error is when a significant difference between study groups is declared when there is none. A conservative alpha level $\alpha=0.017$ was therefore used for the equivalency of $\alpha=0.05$ more generally adopted for the study. Conversely, a Type II error is when a significant difference

between study groups is not declared when there is one. The 'power' is the likelihood of the study identifying a true difference between groups correctly. The acceptable Type II error for this study was set at $ƃ = 0.2$, making the power of the study 0.8 (Power = 1- $ƃ$).

Information on the variables of interest was also collected for eight differences in the proportions of errors made when using the past perfect and past simple between the new, deductive and inductive groups. Performance was evaluated via the simultaneous examination of all answers using the multiplicative law of probability test statistic X^2 (Anon, 2012). This lessened the risk of Type I error, but also ensured a more comprehensive analysis of group performance based on a pool of language items, as single assessments are more prone to give spurious results. The difference in the means of the correct answers for exercise 3 was obtained Student's t-Tests contrasting the mean from the deductive group with that of the inductive group, and similarly between their pooled and the new group.

Results

While all students spoke both English, Arabic and at least one local language, a questionnaire showed that 96 per cent of all students were more comfortable speaking English. Of all students, 52 per cent spoke English 'sometimes' on a daily basis, 40 per cent spoke English ' a lot' on a daily basis, six per cent spoke English 'rarely' on a daily basis, and two per cent 'a few times per month'. At the police workplace, 44 per cent said they often used English, 54 per cent said they sometimes used it, and two per cent said they almost never used English. In the social milieu, six per cent of the students said they often used English, 88 per cent said they sometimes used it, and two per cent said they almost never used English.

Questionnaire results also indicated that learning grammar via the deductive approach with rules being explained first, followed by examples and the opportunity to do exercises was the preferred method for 78 per cent of the learners. A further 16 per cent also preferred the deductive approach but without the necessity for examples to be given after explanation of the rules. The questionnaire also showed that the inductive approach was preferred for learning grammar by six per cent of the learners, with a total of 94 per cent preferring the deductive approach.

The differences in the means between the groups are summarized in Table 1.The difference in the means between the deductive and inductive groups for the number of immediate correct answers produced in the gap-fill exercise needing the formation of verbs in the past perfect (exercise 1) was significant (p=0.011; Bonferroni corrected α=0.017). Therefore students using the deductive procedure, on average, fared better in forming and using the past perfect, with over seven correct answers out of eight. Those following the inductive lesson scored under five correct answers in the same exercise. The research hypothesis was accepted, and there was a significant difference between the average numbers of correct verb formed and used across groups with different teaching methods (inductive and deductive) during initial production.

No significant difference (p=0.34) between the two groups for 'immediate' free(er) production of verbs in the past perfect was found between students taught via a deductive and inductive approach. The null hypothesis was accepted: there was no significant difference between the average number of errors between the inductive and deductive groups during initial production of written sentences.

There was a significant difference (p=0.006; Bonferroni corrected α=0.017) for 'immediate' noticing of verbs in the past perfect in the reading text. Students with the deductive procedure were better at identifying the past perfect, with over nine correct identifications, on average, out of 13 possibilities. Those in the inductive group averaged fewer than five. The research hypothesis was accepted, and there was a significant difference between the average numbers of correct verb identifications across groups with different teaching methods (inductive and deductive) during the initial phase.

There was no significant difference (p=0.304) between the means of the deductive and inductive groups delayed restrictive production of verbs in the past perfect and past simple in the gap-fill exercise 10 days after the initial explanation (exercise 3). There was also no significant difference (p=0.058) between the means of the pooled inductive and deductive groups, and the group of learners that has missed the original inductive or deductive lesson (exercise 3). The null hypothesis was accepted: there was no significant difference between the average number of errors across groups with different teaching methods (inductive and deductive) and also the latecomer 'new' group during delayed written production.

The differences in error frequency with the past perfect and past simple among students are summarized in Table 2. The null hypothesis was accepted, and there was no significant difference (p=0.601) in the proportions of error types across groups during delayed written production. This result was based on the multiplicative law of probability X^2 test statistic.

Overall, results indicate that learners overwhelmingly prefer the deductive approach. Learners with the deductive approach perform significantly better, at times, for immediate language tasks. There is no significant difference in performance of 'delayed' written production when using either the deductive or inductive approach. Both approaches therefore appear to be favorably productive for resident or visiting teachers in a TESEP community.

Discussion and conclusions

Learners overwhelmingly preferred the deductive approach, and were convinced they would perform considerably better through it; this was not so. The minimal differences between the inductive and deductive groups perhaps relate to the underpinning use of local contextualization for both groups. Very often, the 'culture-laden' tasks (presented deductively or inductively) were not perceived to be 'part of the real lesson', but a social opportunity to exchange experiences and views on local (the learners') and world (the teacher's) culture. This resulted in the dramatic lowering of affective barriers (including the teacher's), and rapport-building that could only be described as excellent. Subsequent language learning for learners using either approach felt relevant, and also aided confidence-building and experimentation with new language.

The strategy of nesting new language in locally-relevant contexts and scenarios was seen to be a highly important aid in enriching both deductive and inductive approaches throughout the length of this course. Local contextualization and adaptation of materials may therefore be a key underpinning factor for efficacious language learning. Indeed, not applying this strategy may be a problem in many situations, particularly when the target culture and that used by teachers and textbooks increasingly vary. A long-term study with Nubians showed they routinely had to learn English using content with Egyptian-Arabic socio-cultural references, often uninteresting, irrelevant and often did not facilitate bringing out the meaning and use of new language. While

'traditionally' comfortable with deductive approaches, Nubians were also keen to experiment with communicative language learning using inductive approaches, particularly if the disconnect with their cultural reality was eliminated, irrespective of the approach used (Mallia, 2010). In other studies, sub-Saharan (Mallia, 2013b) and Iranian learners (Alemi & Sadehvandi, 2012) struggled more with the confusing 'alien' cultural contexts than the 'new' use of essentially inductive 'communicative approaches'. The need for more 'local' topics is also evidenced in other countries (e.g. see Al-Kharrat, 2000; Rubdy, 2001).

The 'new' group reinforces the importance of local contextualization: they performed equally well as the previous groups, even with brief, but equally rich contextualization of the target language. English teachers create contexts of use that are relevant to the specific group of speakers in Europe, reflecting specific cultural norms of correctness and appropriateness (Jenkins & Seidlhofer, 2001), and the same rationale suggests this may be equally or more important for learners of English from distant and varied cultures such as those in non-BANA countries. This group therefore succeeded in 'picking up' inductively specific (and challenging) aspects of language during subsequent lessons. The outcomes of language lessons are always negotiated implicitly or explicitly by the interaction that takes place in the classroom, and this may be facilitated by including familiar cultural contexts. By expanding their knowledge of "surface and deep action" (Holliday, 1994, p.113) of the local culture, teachers may therefore develop a useful knowledge-base relevant to the target learners. Indeed, language development needs to belong to people, reflecting their culture and way of thinking (Holliday, 2009).

Another recommendation stemming from this study is that the deductive approach, with explicit and extensive grammar instruction, can be employed successfully with lower-level adult learners. The study shows a deductive approach with terse explanations, and aided by the systematic use of concrete examples during the procedure, particularly when drawn from a familiar African context, brimming with "classroom authenticity" (Swan, 2006, p.12) is both successful and relates to learners' expectations. Teachers can bring grammar 'to their notice' deductively, through rules and socially-relevant examples.

Regarding the use of the inductive approach around the world, Holliday (1993) had already started to observe that "Many teachers in state English language education around the world are unsure about the appropriateness of the communicative approach to the conditions prevalent in their classrooms" (p.3). In another study, the use of culturally relevant and contextualized role-play in a task base learning scenario (i.e. having a strongly inductive approach) was well received by learners from several non-BANA countries, complementing the more traditional, deductive facets of course methodology (Mallia, 2013c). In this study tasks that promote grammar-noticing and consciousness-raising 'inductively' were also successful, and generally shown to be as effective: the inductive approach therefore also succeeds if local contextualization is adopted. Importantly, teachers need not feel constrained to predominantly use a deductive approach due to (over-)favorable local perceptions about it in non-BANA countries.

By understanding their grammatical output, learners were directly helped with their accuracy, but also their fluency by increasing their sense of security, confidence, and achievement, contributing to their overall learning process, as suggested by Scheffler and Cinciata (2010). A deductive approach was generally seen to be more time-effective in achieving this. However, this new 'confidence' was often better exteriorized during inductive tasks.

Learners in non-BANA countries are 'traditionally' discouraged to interact with each other in class, therefore promoting the use of the deductive approach may result in an overly teacher-led environment, aggravating this trait. Encouraging pair/group work for most exercises in class counteracted this, encouraging students to make grammar choices based on discussion, think about and explain their choices. Conversely, the inductive approach intrinsically encouraged peer-interaction and experimenting with new ways of learning and learner-autonomy.

Outside the classroom the learners' natural aptitude for group work, discussion and sharing was highly evident. Pragmatically, learners missing classes due to obligatory work duties easily obtained notes and explanations on form, meaning and use of grammar from their colleagues. Furthermore, they spontaneously worked cooperatively to problem-solve outside the classroom and while doing homework. The 'new' group therefore also had the opportunity to learn metalanguage deductively from their colleagues. This efficient exchange of information and dialogue, coupled with inductive learning in class, help explain why there were no significant differences among all groups when assessed after 10 days.

The 'deductive' group had an essentially teacher-fronted 'grammar presentation' initial phase, but immediately passed on to pair work during the 'practice phase' to review the given examples together and tackle exercises, and also tasks given for freer practice. The use of terse 'deductive approach' style and distribution of class notes, and learners' willingness to share metalanguage, independently of the teacher, emerges as a powerful combination to help develop autonomous learning.

This study therefore suggests that teachers adopting a deductive or inductive approach can give satisfactory results in non-BANA countries. There appears to be a slight favorable edge when the deductive approach is used, specifically for 'immediate' production of language. The use of local contexts to illustrate language meaning and use may be an underpinning factor favoring the balanced use of both approaches.

Table 1. *Differences in correct answers between student group means*

Output (test)	Group+	Mean	Standard error mean	Standard deviation	Difference of means (95% C.I.) ++	p-value
Exercise 1^ (8 answers)	Ind	4.85	0.99	3.58	-2.85 (-4.99 to -0.70)	0.011*
	Ded	7.69	0.31	1.11		α=0.017
Sentence production (5)	Ind	2.31	0.62	2.25	-0.85 (-2.63 to 0.94)	0.337**
	Ded	3.15	0.60	2.15		α=0.017
Reading text (13 answers)	Ind	4.77	1.21	4.36	-4.77 (-8.06 to -1.48)	0.006*
	Ded	9.54	1.04	3.73		α=0.017
Exercise 3^^	Ind	5.15	0.62	2.23	-0.92 (-2.74 to 0.89)	0.304***

(8 answers)	Ded	6.08	0.62	2.25		α=0.05
Exercise 3^^	Ded.+Ind.	5.54	0.44	2.23	1.37 (-0.05 to 2.79)	0.058***
(8 answers)	New	4.17	0.56	2.76		α=0.05

^ Exercise 1 Immediate production of past perfect / past simple (same-day gap-fill)
^ ^ Exercise 3 Delayed production of past perfect / past simple (gap-fill 10 days later)
+Group: Ded = deductive learning, n=13; Ind = inductive learning, n=13; **,** new group n=24
++C.I. = confidence interval
* Student's *t*-Test, statistical significant difference, α=0.05 (Bonferroni's adjustment: Lower α=0.05 to 0.017)
** Student's *t*-Test, no statistical significant difference, α=0.05 (Bonferroni's adjustment: Lower α=0.05 to 0.017)
*** Student's *t*-Tests , no statistical significant difference, α=0.05

Table 2. *Differences in error frequency with the past perfect and past simple among students*

Group* (method)	Error frequency								X^2 **
	Q.1	Q.2	Q.3	Q.4	Q.5	Q.6	Q.7	Q.8	
Deductive	1	7	0	0	0	0	6	5	12.07
Inductive	4	7	0	0	0	0	6	6	
New	0	9	3	0	1	2	8	13	

* Inductive group n= 13, deductive group n=13, new group n=24
***Multiplicative Law of Probability test statistic* $X^2 = \Sigma$ [(observed frequency – expected frequency)^2 / expected frequency]. For α = 0.05, X^2 =12.07. As it does not exceed the critical value (X^2 = 23.685), the null hypothesis is accepted: there is no significant difference (p=0.601) in the proportions of error types across groups with different teaching methods.
(For questions 1-8 (Q.1-8) see Appendix 7)

About the Author:
Joseph Mallia has a PhD in English with a focus on the differences in English learning strategies' that reflect the influence of socio-cultural variance in language learning and teaching, particularly in the Arab World. Reflecting this, he has carried out teacher and trainer training in the MENA region and beyond. His current interests also include teaching English for academic and specific purposes, and experimenting with the teaching of grammar within writing systems.

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