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Noticing: Its Impact on Adult Users of English in a Non-Native Context

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Abstract

This paper presents one perspective of the conversation on noticing. It investigates the noticing experience of adult users of English in a non-native context. The respondents were forty final-year undergraduate students majoring in Accounting in a public tertiary institution. A questionnaire, a short-written test, and post-test verbal report sessions were used to source empirical data to probe the respondents' own noticing experience of ten linguistic features. Values were generated to approximate and represent the respondents' noticing experience, implicit knowledge, and their explicit knowledge of the linguistic features investigated. The study reveals that adult users of English in second language contexts may possess implicit knowledge of linguistic features they had not previously noticed, but they need to notice in order to have explicit knowledge of linguistic features. The study concludes that second language learners usually learn what they have first noticed, and that which has been noticed usually results in learning.

Keywords: Noticing, Noticing Experience, Noticing Index, Implicit Knowledge Index, Explicit Knowledge Index

1. Introduction

The Noticing Hypothesis has been discussed widely in the second language literature for about three decades, and it continues to attract empirical and theoretical research across the globe, engendering both support and controversy. Among questions raised is the issue of validity of the hypothesis itself. Some researchers, mostly applied linguists, are clear in their minds that Schmidt's (1990, 2010, etc.) works on the hypothesis have proved seminal. For example, Ellis (2015:151) acknowledges the importance of noticing linguistic features and is concerned about how learners can be helped to notice grammatical forms in the second language input. Other researchers, including Truscott (1996) and Carroll (2006), have issues with certain aspects of the hypothesis (refer to Section 2.2). Regrettably, however, none of the published discussions on the hypothesis is reported from Ghana, a multilingual post-colonial African country south of the Sahara.

The ultimate aim of this study, therefore, is to present a West African perspective of the conversation by examining the Noticing Hypothesis using data sourced from non-native adult users of English in Ghana with the

view of confirming or disconfirming the validity of the hypothesis. In order to achieve this ultimate aim, the following four objectives were pursued.

- i. To administer a short test to a group of final-year undergraduate students in a tertiary institution in Ghana on their familiarity with ten defined linguistic forms whose usage the respondents are supposed to have mastered in high school.
- ii. To find out whether or not the respondents had previously noticed the linguistic feature whose usage is being tested through the respective test item.
- iii. To see whether or not there is a correlation between items they found easy to execute and linguistic features they had previously noticed.
- iv. To harvest confirmatory data through post-test verbal report sessions.

Three research questions guided the realisation of the objectives listed above.

- i. Is the respondents' familiarity with the ten defined linguistic forms congruent?
- ii. Why were the respondents who rewrote the sentences correctly able to do so?
- iii. Is there any relationship between the sentences they could rewrite correctly and the linguistic features they had previously noticed?

2. Noticing: What is it?

Noticing is a concept that has been defined variously in the second language literature and, in most cases, its meaning is somehow related to attention, observation, and awareness (Carr and Curran, 1994; Gass, 1988; James, 1890; Schmidt, 1990; Schmidt, 1995; Schmidt, 2001; Unlu, 2015; Williams, 2013). Noticing suggests distinguishing (sometimes with difficulty) something and recognising that thing for what it is, discriminating it from its competitors. Occasionally, noticing conveys the idea of understanding meanings and implications of that which has been noticed. The concept 'noticing' mostly implies becoming aware of something and paying attention to that thing. According to Ellis (2015:322), noticing is a "cognitive process whereby linguistic exemplars in the input that learners are exposed to are consciously attended to." Schmidt (2001:16) had earlier argued that "attention is necessary to understand virtually every aspect of second language acquisition."

In practical terms, noticing may denote the conscious (more or less) activity of observing or paying attention to a grammatical feature, and it has been associated with a variety of terms including focal awareness (Atkinson and Shiffrin, 1968; Kihlstrom, 1984), episodic awareness (Allport, 1979), and apperceived input (Gass, 1988). Each of these terms attempts to capture a particular level at which a linguistic element in a second language input may be perceived or experienced. Noticing, therefore, has to do with assigning of significance to a particular language feature such as tense, aspect, number, or person relative to others. Various learner characteristics (usually categorised as personal, academic, social, emotional, cognitive, etc.) may determine whether a learner may or may not notice a grammatical feature in the input encountered and different learners may have varying levels of motivation for noticing.

It is generally agreed among one camp of second language researchers that successful second language learning mostly involves noticing certain grammatical features of the second language input (Chi, 2018; Schmidt, 2010; Leow, 2013). According to Schmidt (1990:129), "noticing is the necessary and sufficient condition for converting input to intake." In other words, what learners notice in the second language input is what becomes intake for learning. This assertion is what has come to be known as the Noticing Hypothesis.

2.1. The Noticing Hypothesis

The Noticing Hypothesis is generally considered "a theory of attention" (Ellis, 2015:182). It asserts that paying selective attention (or noticing) facilitates second language learning, and this implies that unattended learning (or non-noticing) is limited in relevance for second language learning. Schmidt (1990:132) stresses that noticing is a "private experience." He observes that although noticing can be operationally defined as "availability for verbal report," the lack of a verbal report cannot be taken as evidence of failure of noticing unless the report is gathered

either concurrently or immediately after the experience. Schmidt asserts that noticing "is the basic sense in which we commonly say that we are aware of something" (1990:132). In other words, "people learn about the things they pay attention to and do not learn much about the things they do not attend to" (Schmidt, 2010:721). Noticing, however, is not the end point of the process of experiencing insight and understanding. This is because, having noticed a particular feature in the input, the active learner can analyse it and compare it to what has been noticed on other occasions.

Schmidt (2001:5) describes what must be noticed in the second language input as "elements of the surface structure of utterances in the input – instances of language – rather than any abstract rules or principles of which such instances may be exemplars." In a much later work, Schmidt (2010:721) elucidates "input does not become intake for language learning unless it is noticed," that is, unless the grammatical feature in question is consciously registered. The Noticing Hypothesis has been very influential in the twin fields of second language learning on the one hand and second language teaching on the other hand. Most empirical studies, including Anahita, Karimi, & Mahmoodi (2016), Leow (1997, 2000), Izumi (2002), and Mackey (2006) provide evidence for it. Ellis (2015:182) confirms this when he says "the Noticing Hypothesis has informed research on the role of input and interaction." Today, the hypothesis is regarded as a "mainstream SLA construct" (Yoshioka, Frota, and Berbsleithner, 2013:7) even though some aspects of the hypothesis have been criticised by some researchers including Carroll (2006), Gass (1997), Schachter (1998), Tomlin and Villa (1994), and Truscott (1998).

2.2. Some Objections and Counterpoints

One of the objections to the Noticing Hypothesis is the claim that attention to environmental stimuli does not play a direct role in acquisition because most of what constitutes linguistic knowledge is not in the input to start with. Researchers that hold this position, including Carroll (2006), doubt the idea that "input" for language learning is "something" objective and observable in the environment. They are of the opinion that the object of acquisition – phonemes, syllables, morphemes, nouns, verbs, cases, etc. – consists of mental constructs that exist in the mind and not in the environment at all. They argue that if these objects of acquisition are not present in the external environment, there is no possibility of noticing them. Carroll is of the view that acquisition is "not mediated by conscious awareness, explicit instruction, feedback, or correction" (Carroll, 2006:17). In response to the aforementioned criticism, Schmidt reminds his readers that "ideas about attention, noticing, and understanding are more compatible with instance-based, construction-based, and usage-based theories than with generative theories" (Schmidt, 2010:729).

Another objection is that raised by Gass (1997:16) which opposes the assertion that attention is a necessary condition for all learning. She explains that some types of learning do not even depend on input at all. Gass cites studies showing that ESL learners who are instructed on one type of relative clause performed well on other types of relatives that are higher in the relative clause accessibility hierarchy to explain her position that input on those constructions was not available to the learners in the study. She argues, "If no input existed, how could attention to input be a necessary condition for all aspects of learning?" To begin his response to Gass (1997), Schmidt appeals to his readers that the Noticing Hypothesis be more carefully reformulated (or be more carefully quoted). He then clarifies that the basic claim of the hypothesis is that, in order for input to become intake, it must be attended to and noticed. He contends, "if there are true cases where input is not needed for learning (which is attributed instead to UG or some other internal resources), the Noticing Hypothesis is irrelevant (or not applicable to those cases) rather than wrong."

A related issue to the preceding criticism was raised by Schachter (1998) who argues that not all learning requires attention. She explains that although she is perfectly willing to agree that learning individual words (the lexicon), individual sounds (the phonetic inventory), and writing systems must be via attentional focus, she is not the least willing to say that learning phonological, morphological, and syntactic rules require this attentional focus (Schachter, 1998:574). In his response, Schmidt acknowledges that some studies on implicit learning claim that some forms of learning do not require attention; but he emphasises that the bulk of research supports the opposite assertion (Schmidt, 2010: 728).

These three preceding criticisms of the Noticing Hypothesis appear to emanate from one of two main classically opposed approaches to second language acquisition research, the Rationalist approach. Researchers with this orientation are identified by four main characteristics. First, they apply deductive reasoning in their approach. Deductive reasoning moves from generalised principles and statements into specific observed cases. So, deductive arguments are said to be either valid or not. Second, they insist that the brain has access to universal grammar at the inception of second language learning. They believe that the brain is filled with principles and parameters that support second language acquisition. Third, they claim that second language knowledge has an internal source, independent of experience, derived from the structure of the mind, and led by innate competence. And finally, they claim that language is acquired on the basis of a mechanism known as the language acquisition device which is placed somewhere in the brain.

Another opposition to aspects of the Noticing Hypothesis comes from Tomlin and Villa's (1994) Theory of Attention. One of the issues they raised is the claim that "detection and further processing of stimuli can be dissociated from awareness of what is attended to" (Tomlin and Villa, 1994:193). However, Schmidt (1995:18) is of the view that "it is difficult to distinguish among paying attention to something, noticing it, and being aware of it." In earlier publications, Schmidt (1990 and 1994) had consistently pointed out that focal attention and awareness are essentially isomorphic. This view of the concept "noticing," which is shared by the current researcher, is consonant with that expressed by Carr and Curran (1994:219). They emphasise that the three aforementioned activities often convey the same meaning. Carr and Curran explain, "If you are conscious of something, then you are attending to it ... and if you are attending to something, then you are conscious of it" (1994:219).

It is informative to observe that from his own assessment of these two SLA theories of attention, Ellis (2015:184) concludes that the Noticing Hypothesis can be considered a fuller account of the role of attention than that provided by Tomlin and Villa (1994). Ellis explains that "the main difference between the two theories lies in what happens when attention takes place." His view is that Tomlin and Villa (1994) did not say much about what learners do with the information they have detected; however, Schmidt's concepts of 'noticing' and 'noticing the gap' address not only detection but also what learners do with what they have detected. No wonder, Ellis (2015:181) remarks that Schmidt's work on attention "has proved seminal in SLA."

The criticism of the Noticing Hypothesis put forth in the review article by Truscott (1998) appears to be the fiercest. In that publication, Truscott raises several objections to the Noticing Hypothesis. He argues, for example, that the foundations of the hypothesis in cognitive psychology is weak and calls for a reformulation of the hypothesis to "noticing is necessary for the acquisition of metalinguistic knowledge but not competence." It is important to observe that, in his response to objections to the hypothesis, Schmidt (2010) however excludes the issues raised by Truscott; perhaps, Schmidt (2010) does not consider them important. For, he says, "I will only summarise some of the more important objections together with my responses" (Schmidt, 2010:727).

Schmidt (1995:21) observes that critics reviewing academic publications may somehow draw conclusions that are not in consonance with the contents of the article reviewed. Schmidt (1995:21) laments, "I find it surprising that these reviewers drew these conclusions ...". He explains, "Considering the Nissen and Bullemer article, those authors did not say themselves that there was little relationship between awareness as assessed by a questionnaire and performance on the primary task." Schmidt clarifies that what they said was "that in the single task repeating pattern (where learning was good) virtually all subjects reported noticing a sequence and that in the dual-task condition (where no learning occurred) virtually no subjects reported noticing a sequence" (Schmidt, 1995:21).

Also, Ferris (1999) reports that, usually, opponents of a proposition or a hypothesis may not accurately present the expressed position of the opposed side. She writes that she usually tasks pre-service teachers in her TESOL graduate course to read a review article, observing the key studies cited by the reviewer, and then to compare their own reading of the original sources with the statements made by the reviewer. Ferris stresses, "this exercise is always very illuminating. More often than not, the reviewer has under- or over-stated the findings and claims of the original studies to suit his or her own generalisations or arguments" (Ferris, 1999:4).

That is not all: Ellis (2006b:833) contests statements attributed to him by his critics. He says Sheen (2006) claims that "I argue that learners need no grammar instruction during the first year of learning. But this is not, in fact, how I addressed this issue". Also, Ellis (2006b:834) retorts "Again, I find that his summary does not correspond to my treatment of this issue. ... He raises an issue that I do not mention at all in this section". Furthermore, Ellis (2006b:835) replies "he claims that I argue that traditional grammar teaching is not an acceptable option because it does not enable learners to acquire implicit knowledge. I fail to find where in the article I have made this assertion, nor, in fact, does it correspond to my belief".

Furthermore, in his response to Swan and Welter (2006), Ellis (2006b:839) argues "I am accused of a dismissive and inaccurate portrayal of the principles and practice of pedagogic grammarians. But where in my article did I ever do this? In fact, I do the opposite". There were times that Ellis was furious in his response to critics who misrepresent his views. On one occasion, Ellis (2006b:833) replies his critic "I must admit, then, to some disappointment that when confronted with yet another response from Ron Sheen, which extracts from my article those statements that he, from his rather narrow perspective, object to, without any acknowledgement point-counterpoint of my own presentation of the issue". This state of affairs where a researcher is portrayed as displaying a rather narrow perspective of a proposition is not new. About two decades earlier, Ellis (1994:168) decides to respond to his critics in an uncharitable manner. He writes, "In short, Robinson's claim is a reflection of his own ignorance of Bialystok's early work (his confusion)." Ellis (1994:168) interprets Robinson's claim as "a failure to recognise the importance of distinguishing knowledge and learning in discussions of the explicit/implicit distinction."

The current researcher's own observation is that this state of affairs usually results in interesting and insightful academic debates. For example, Truscott's (1996) review article 'The case against grammar correction in L2 writing classes' has generated several debates, involving many second language acquisition researchers, and resulting in numerous publications including (Bitchener, 2008), (Bitchener & Knock, 2009a, 2009b, 2010), (Brown, 2012), (Chandler, 2003, 2004, 2009), (Ellis, 2010), (Ellis, Sheen, Murakami, & Takashima, 2008), (Ferris, 1995, 1999, 2004, 2006, 2007, 2010), (Ferris & Roberts, 2001), (Ferris, Liu, Sinha, & Senna, 2013), (Frear, & Bitchener 2015), (Sheen, 2010), (Truscott, 1996, 1999, 2007, 2009, 2010).

In Truscott's (1998) criticism of the Noticing Hypothesis, for example, he writes that 'the Noticing Hypothesis is the claim that second language learners must consciously notice the grammatical form of their input in order to acquire grammar' (1998: 103). But this representation seems inaccurate. The different renditions of the Noticing Hypothesis as expressed by Schmidt himself include "noticing is the necessary and sufficient condition for converting input to intake"(1990:129); "intake is that part of the input that the learner notices" (Schmidt, 1990:139); "what learners notice in input is what becomes intake for learning" (Schmidt, 1995:20); "People learn about the things they attend to and do not learn much from the things they do not attend to" (Schmidt 2001:30); "input does not become intake for language learning unless it is noticed" that is, unless it is "consciously registered" (Schmidt 2010:721). These five different renditions convey a central idea, and this idea is inconsistent with that conveyed in Truscott's quote of the hypothesis.

2.3. A Major Source of Debate

There are various reasons why researchers may disagree over a theoretical or a practical issue. Lack of consensus on definitions of key terminologies used in the second language literature is one of the sources of debate among researchers. It is not doubtful that the two different positions held by Schmidt and his supporters on the one hand and critics of the hypothesis on the other hand can be likened to the two sides of the same coin; whereas Schmidt, in the case of noticing, was talking about "learning", his critics were talking about "acquisition". Surprisingly, the implications of these two terms have long (about four decades ago) been provided in the second language literature by Krashen (1977, 1981, 1982), Bialystok, (1978, 1980), and Ellis (1994, 2005, 2006a). For example, Krashen (1981) asserts that the basic premise of the acquisition-learning hypothesis is that language acquisition, on the one hand, and language learning, on the other hand, involve separate processes. Krashen (1981:1; 1982:10) assumes that adult second-language learners have two independent means for developing ability in second languages: one way is through acquisition and the other through learning.

According to Krashen (1981), language acquisition is very similar to the process children use in picking up first and second languages. "It requires meaningful interaction in the target language – natural communication – in which speakers are concerned not with the form of their utterances but with the message they are conveying and understanding" (Krashen 1981:1). Krashen (1982) explicates that language acquisition is a subconscious process and language acquirers are not usually aware that they are acquiring language. They are only aware that they are using the language for communication. Krashen asserts that "We are generally not consciously aware of the rules of the languages we have acquired (1982:10)". He explains that, instead, we have a 'feel' for correctness and that "grammatical sentences *sound* right, or *feel* right; errors *feel* wrong even if we do not consciously know what rule was violated" (Krashen, 1982:10). So, the process of language acquisition leads to 'acquired linguistic competence' and this is attained through natural interaction and meaningful communication.

From Krashen's perspective, the second way by which adults could develop competence in a second language is by language learning. Language learning refers to the 'conscious process that results in "knowing about" language' (Krashen, 1985:1). Krashen (1982:10) defines language learning as "Conscious knowledge of a second language, knowing the rules, being aware of them, and being able to talk about them." According to him, "in non-technical terms, learning is *knowing about* a language, known to most people as *grammar* or *rules*. Some synonyms include formal knowledge of a language or explicit learning" (1982:10). In Krashen's view, the acquired system is used to produce language; it generates utterances because, in producing language, acquirers focus on meaning, not on form. The learnt system serves as an 'editor' of the acquired system; it checks to ensure the correctness of the utterance against the knowledge in the learnt system.

Closely related concepts to *acquired knowledge* and *learned knowledge* are *implicit linguistic knowledge* and *explicit linguistic knowledge* respectively distinguished by Bialystok (1978, 1980). According to Bialystok (1980:201), "implicit linguistic knowledge is the intuitive information upon which the language learner operates in order to produce responses (comprehension or production) in the target language." Information that is automatic and is used spontaneously in language tasks is represented in implicit linguistic knowledge. This view of the function of this knowledge type is not restricted to Krashen and Bialystok alone. Schmidt confirms that it is in the domain of implicit knowledge "that a language learner may claim that a sentence *sounds* or *feels* right, although no direct evidence for the correctness of the sentence could be cited" (Schmidt, 2010:202). Like Krashen, Bialystok (1980) ascribes only one function to the implicit linguistic knowledge source; it is a working system that contains all the information about the second language necessary for most spontaneous comprehension and production tasks.

Also, Bialystok (1980:202), like Krashen, asserts that "explicit linguistic knowledge contains all the conscious facts the learner has about the language." Evidence for this knowledge type is the ability to articulate facts about the language. These may include grammar rules, pronunciation rules, and vocabulary items. But unlike Krashen, Bialystok assigns the explicit linguistic knowledge source three functions. First, this knowledge source serves as a buffer for new linguistic data. (A buffer is a component of a system that stores information temporally while either dealing with the data or sending it to another component.) She explains that "New words or vocabulary items which are presented in a classroom or encountered in any other explicit situation would at first be represented in explicit linguistic knowledge (Bialystok, 1980:202). She further suggests that the information may become automatic and transferred to implicit linguistic knowledge after continued use. This view of the relationship between implicit and explicit knowledge is referred to as the interface position. Krashen holds the opposite view, the non-interface position, which asserts that the knowledge compartments are watertight.

Second, the explicit linguistic knowledge source serves as the store for information that is represented explicitly. Bialystok observes that "even native speakers will find that certain grammar rules or word meanings required some consciousness in order to be used correctly." She explains that native English speakers, for example, sometimes report the need for conscious attention in order to properly differentiate "lie" and "lay." Third, the explicit linguistic knowledge source serves as "explicit articulatory system." In other words, linguistic data represented in implicit linguistic knowledge may be made conscious, or explicit, in the explicit linguistic knowledge source. Bialystok notices that "rules which are used implicitly and operated upon correctly may be

generated and the explicit statement of them brought into the explicit linguistic knowledge source if required. It is worth noting, according to Bialystok, that it is possible for any information to be represented in either source and that the levels of any two-second language learners' linguistic knowledge associated with the two sources may vary greatly. She explains that "a larger explicit linguistic knowledge source is associated with extensive knowledge of formal aspects of the language but does not necessarily imply an ability to use this information effectively" (Bialystok, 1980:203).

Consonant with views on acquisition, learning, explicit knowledge, and implicit knowledge expressed by researchers such as Krashen (1977, 1981) and Bialystok (1978, 1980), Ellis (2006a:95) presents explicit knowledge as consisting of the facts that speakers of a language have learned which facts may relate to the various aspects of language including grammar. Ellis observes that "explicit knowledge is held consciously, is learnable and verbalisable, and is typically accessed through controlled processing when learners experience some kind of linguistic difficulty in using the L2." Conversely, "implicit knowledge is procedural, is held unconsciously, and can only be verbalised if it is made explicit" (Ellis, 2006a:95). Ellis, like Bialystok and Krashen, observes that implicit knowledge is accessed rapidly and easily and thus is available for use in rapid, fluent communication.

Another example to illustrate the point that lack of consensus on definitions is one of the causes of debate in the second language literature is how the terms *input* and *intake* have been interpreted and used. Corder defines input as follows: "Input is what goes in, not what is available for going in; and we may reasonably suppose that it is the learner who controls this input, or more properly his intake" (Corder, 1967:165). Corder does not tell us the term for 'what is available for going in'; it appears he uses *input* and *intake* interchangeably to mean what Schmidt has consistently referred to as *intake*. However, Krashen (1981:102) defines intake as 'that subset of linguistic input that helps the acquirer to acquire language.' He uses the term *comprehensible input*. Krashen, therefore, considers *intake* synonymous with his description of comprehensible input. So, for Krashen, what is available for going in is *input* and what actually goes in is comprehensible input. It is important to observe that not every input available may actually go in; only part of what is available may be processed in.

Schmidt (1990:139) elucidates these two terms when he hypothesised that "intake is that part of the input that the learner notices." In other words, input is what is available for going in, and *intake* is what actually goes in. Two decades later, Schmidt (2010:721) restates the hypothesis in negative terms as "input does not become intake for language learning unless it is noticed." It is clear that Schmidt is consistent with his distinction between these two terms; *input* is the universal set, and *intake* is a subset of *input*. The lack of consensus in the use of terminology in the field of second language acquisition research itself may stem from the fact that researchers come into this field with diverse conceptual orientations rooted in different disciplines including education, linguistics, applied linguistics, psychology, educational psychology, biology, sociology, anthropology, communication studies, and physics. Bringing with them a wide range of perspectives, researchers with varied backgrounds will certainly disagree on many issues. The long theoretical review in this section is purposeful.

2.4. Empirical Studies

The rest of this section briefly reviews two empirical studies as a way of situating the current study in perspective. The first discusses noticing explicitly, but the second does not. Using undergraduate students majoring in English in a Brazilian university as respondents, Frota and Bergsleithner (2013) investigated the impact of classroom instruction on noticing. They wanted to know whether undergraduate English major students were likely to notice instances of a specific target structure in written input after receiving explicit instruction about such structures. English constructions investigated were structures involving pre-modified English nouns. A short pre-test was administered to the research participants to determine whether they were already sensitive to the occurrence of pre-modifying nouns which are common in English but rare in Portuguese, the participants' mother tongue. Then, the participants received explicit instruction on English pre-modifying nouns. Subsequently, two recognition tests were administered to assess whether their sensitivity to the occurrence of such structures was enhanced by the treatment, one was administered immediately after the

teaching session and the other administered two weeks later. According to Frota and Bergsleithner (2013), the findings indicate that the hypothesis that instruction would lead to enhanced noticing was largely supported.

Using 150 final-year undergraduate students studying Linguistics in a tertiary institution in Ghana as respondents, Agor (2014) set out to investigate the students' intra-sentence writing difficulties. He conducted a thirteen-week pedagogical intervention where two classes of Level 400 students were constituted based on the students' own preferences to study *Syntax of English* or *Linguistics and Language Teaching*. An entry-behavior test was administered the first day of lectures to both classes, in part, to establish their actual English writing needs. Grammar topics involving specific linguistic features that undergraduate students are assumed to have mastered in high school but which are areas of challenge to them were included in the contents taught to the experimental group. The control group was taught the normal traditional contents of the course. By the end of the semester, a recognition test involving the specific linguistic features was administered to the two groups. The results indicate that the difference between the exit- and the entry-behavior mean marks of the control group (34.8% – 31% = 3.8%) is marginal, but that of the experimental group (89.4% - 30.6% = 58.8%) is huge. The study concludes that if actual English writing needs of ESL/EFL students are injected into their syllabus contents, standards in English writing among non-native learners will be enhanced.

Although the second empirical research, Agor (2014) was not explicitly set out to investigate noticing, issues relative to noticing could be inferred from the findings. For example, it follows from the findings of that study that formal instruction promotes noticing, and this observation is in tandem with the tenets of the noticing hypothesis. The two empirical studies reviewed above informed the research method deployed in the current study.

3. Method

Forty final-year undergraduate Business students studying Accounting in a public tertiary institution in Ghana participated in the study as respondents. As agreed upon, the institution remains anonymous. The respondents were made up of twenty male and twenty female. They were all Ghanaian and ranged between ages 23 and 44. They were randomly admitted to participate in the study, and each of them gave consent to serve as a respondent. The 40 were the first twenty men and the first twenty women who consented to participate in the study. All the respondents had studied English as a curriculum subject and also as a medium of instruction for over twelve years. They were functionally bilingual in English and at least one indigenous Ghanaian language, and for the purpose of anonymity, they have been named 1, 2, 3, up to 40. The data collected was to probe whether or not, prior to the administration of the test, the respondents had noticed certain defined linguistic features in the input and how their noticing experience would influence their performance on the test. These linguistic features correspond to ten intra-sentence writing issues identified in Agor (2014; 2018) as local undergraduate students' most prominent areas of challenge. These ten areas of challenge include left dislocation, sequence of tenses, discord in an embedded clause, proximity concord deviation, and misplaced modification. The rest are ambiguity, category restriction rule deviation, dangling modification, redundant prepositions, and omission of a preposition.

3.1. Data Collection Instruments

Two main instruments were used to elicit information from the respondents: first, a questionnaire and a short test; and second, verbal reports. The questionnaire investigated the personal and linguistic background of the respondents, and the short test probed their familiarity with the ten grammatical features named above. The test paper was attached to the questionnaire and consisted of ten short sentences derived from undergraduate student essays. The ten sentences are unacceptable in formal written English. They are unacceptable because they are either morphologically, lexically, syntactically malformed or semantically unclear. Each of the ten sentences was followed by three blank lines lettered 'a,' 'b,' and 'c' at the left margin. On the line lettered 'a,' the respondents were required to state whether, in formal written English, the sentence is correct or incorrect. On the line lettered 'b,' they were to rewrite the sentence correcting all errors they could detect. On the line lettered 'c,' they were to

say whether or not they had ever attended to (i.e., noticed) the respective grammatical feature being tested. The questionnaire and the test were administered during lecture hours. The ten sentences contained in the test administered have been included in this paper as Appendix A. Verbal report sessions, the second main instrument deployed, provided a useful platform for harvesting post-test data. Data sourced through this means responded to research questions 2 and 3.

3.2. Data Analysis Techniques

Two main techniques were used to analyse and to present the data sourced. A test item analysis table was devised for analysing and presenting the responses supplied. This consists of rectangular cells arranged in columns and rows. The first column is headed *R* representing *respondents* and under this head are cells containing the numbers 1 to 40 representing the 40 respondents. Columns 2 to 11 are headed S1 to S10 and represent the ten sentences supplied in the test. Additionally, the column headed *SSC* shows the total scores obtained for stating whether the sentence is correct or incorrect, and that headed *SRC* signifies the total number of sentences re-written correctly by each respondent. Furthermore, the column headed *NFN* shows the number of grammatical features each respondent had noticed prior to the administration of the short test; and that headed *100%* provides the percentage score obtained by each respondent on the test. Since all the respondents were advanced learners of English, it is worth noting that these four final columns specifically demonstrate the respondents' noticing experience in respect of the linguistic features investigated.

Each of the cells that fall under Columns 2 to 11 consists of one of the following pair codes: $\sqrt{\sqrt{}}$; \sqrt{x} ; $\sqrt{-}$; $x-$; $--$ followed by either *y* (representing yes) or *n* (representing no). The pair codes preceding the 'y' or the 'n' are interpreted as follows:

- i. $\sqrt{\sqrt{}}$ a correct choice made and an acceptable sentence re-written.
- ii. \sqrt{x} a correct choice made but an unacceptable sentence re-written.
- iii. $\sqrt{-}$ a correct choice made but no sentence re-written.
- iv. $x-$ an incorrect choice made and no sentence re-written.
- v. $--$ no choice made and no sentence re-written.

Pair codes xx ; $x\sqrt{}$; and $-\sqrt{}$ have not been interpreted here because they are unrealisable in this context of analysis. Each of the ten sentences constituting the test is unacceptable. Therefore, the respondents were expected to answer the 'a' part of each item by stating that the sentence was incorrect and then to proceed to the 'b' part to rewrite the sentence correcting all errors detected. The 'y' or 'n' that follows each of the pair codes ($\sqrt{\sqrt{}}$; \sqrt{x} ; $\sqrt{-}$; $x-$; $--$) in each cell indicates whether or not the respondent had ever noticed the grammatical feature whose familiarity is being tested in the respective sentence. As required of them, respondents who stated that the sentence was correct did not attempt the 'b' part; they did not see any error to correct. So, each response indicating that the sentence was correct is represented by the pair code $x-$ because the response to the 'a' part is wrong and the respondent did not attempt the 'b' part. The other issue is that, once the respondent failed to attempt the 'a' part, he did not attempt the 'b' part either. This situation is represented by the pair code $--$.

As part of the item analysis procedure, ratings for the respondents' *noticing experience*, *implicit knowledge*, and *explicit knowledge* relative to the grammatical rule applicable to each test item have been determined. These are presented in Rows 42, 43, and 44, beginning with *NI*, *IKI*, and *EKI*, respectively. The second technique employed was basic arithmetic procedures. These were used in calculating the figures associated with the data. The rationale for accessing and processing the data was partly to get local empirical information that would provide evidence to confirm or refute the efficacy of the Noticing Hypothesis. These techniques were used by Agor (2018) and were found extremely productive.

4. Analysis and Results

Each of the 40 respondents returned the questionnaire and test paper to the researcher completely or almost completely filled. All the items on the questionnaire were answered. Also, all the 'a' and the 'c' tasks of each test item were executed, but some of the 'b' tasks were left undone. The sets of information gathered were codified and presented in the form of a test item analysis table for interpretation and discussion. The test item analysis

table appears in this paper rather as Appendix B. Its inclusion makes it possible for readers to see all the relevant information at a glance. The analysis presented in the said table summarises the results and is interpreted subsequently on the basis of the ten language features investigated.

Sentence 1 is a left dislocated construction (refer to Appendix A). Dislocated sentences are not acceptable in formal written English. Twenty-five respondents said they had noticed this grammatical feature prior to the administration of the test and were familiar with its correct usage in formal written English. They said they already knew that the Ghanaian school variety of English does not permit dislocation of the kind investigated. The noticing index generated from this finding is 6.25. This means that 62.5% of the respondents had noticed this phenomenon in the English language input prior to taking this test. For implicit knowledge, 35 respondents made the correct choice; they indicated that the sentence under discussion is incorrect in formal written English. For explicit knowledge, 25 respondents rewrote correct sentences. This means that the respondents found the 'a' part of the question (stating whether the sentence is correct or incorrect) easier than the 'b' part (rewriting the sentence correcting all errors detected). Find below the formula used for generating indices for implicit knowledge, explicit knowledge, and noticing.

Implicit knowledge index:

$$\frac{\text{Correct choices made}}{\text{Total number of respondents}} \times 100 = \frac{35}{40} \times 100 = 87.5\%$$

Explicit knowledge index

$$\frac{\text{Acceptable sentences rewritten}}{\text{Total number of respondents}} \times 100 = \frac{25}{40} \times 100 = 62.5\%$$

Noticing index

$$\frac{\text{Respondents who had noticed}}{\text{Total number of respondents}} \times 10 = \frac{25}{40} \times 10 = 6.25$$

Sentence 2 is a task on sequence of tenses, and the findings are as follows: 23 respondents chose the correct option, and 7 rewrote the sentence correctly. Their implicit knowledge index of sequence of tenses is 57.5% and their explicit knowledge index is 17.5%. As regards noticing, 7 respondents said they had noticed this grammatical feature and were familiar with its usage. Therefore, their noticing index of sequence of tenses is 1.75. For Sentence 3, where the application of notional concord is required, 28 made the correct choice, 11 made wrong choices, and one student did not respond to the question. Also, 24 respondents rewrote the sentence but only 13 produced sentences that are grammatical. So, the implicit and the explicit knowledge indices generated are 70% and 32.5% respectively. On the issue of noticing, 13 respondents said they had noticed this grammatical feature in earlier input. The noticing index generated from this is 3.25. Sentence 4 calls for the application of the principle of proximity concord and results from this item are as follows: 30 respondents made the right choice, and only 2 rewrote sentences that are grammatical. Figures for implicit knowledge and explicit knowledge are 75% and 5% respectively. With regards to noticing, only 2 affirmed that they had previously noticed this grammatical rule. The noticing index generated, therefore is 0.5.

The issue with Sentence 5 is that the modifier is dangling. Fifteen made the correct choice, but none was able to rewrite a grammatically and logically valid alternative sentence. Indices for implicit knowledge and explicit knowledge are 37.5% and 0% respectively. The noticing index generated is 0.0 because all the respondents claimed they had never noticed this phenomenon in their previous input. Sentence 6 is a task on misplaced modifiers, and the findings are as follows: 25 respondents chose the correct option, and 12 rewrote the sentence correctly. Their implicit knowledge index is 62.5% and their explicit knowledge index is 30%. Figures for noticing are as follows: 12 respondents had noticed this grammatical feature and were familiar with its usage. This finding produced noticing index of 3.5. Sentence 7 investigated their familiarity with ambiguous constructions. It turned out that 29 chose the correct option and 24 rewrote acceptable sentences. These data generated implicit knowledge index of 72.5% and explicit knowledge index of 60%. The noticing index is 6.0 because 24 respondents had noticed this phenomenon in their previous input.

Sentence 8 probed their familiarity with the use of the adjective *mature*. The results show that 17 made the correct choice and 11 rewrote acceptable sentences. These generated implicit knowledge index of 42.5% and explicit knowledge index of 27.5%. The noticing index generated is 2.75 because 11 respondents had noticed this phenomenon in their previous input. For Sentence 9, where the respondents' familiarity with the use of the preposition *from* is investigated, 33 made the correct choice and 11 rewrote grammatically correct sentences. These generated implicit and explicit knowledge indices of 82.5% and 27.5% respectively. With regard to noticing, 11 respondents said they had noticed this grammatical feature in earlier input. The noticing index generated is 2.75. Sentence 10 investigated their usage of the verb *enable* and the results are as follows: 15 respondents chose the correct option, and only 2 rewrote the sentence correctly. Their implicit knowledge index is 37.5%, their explicit knowledge index is 5%, and their noticing index is 1.75. Part of the discussion session investigates possible correlation between the noticing index and the two knowledge indices.

5. Discussion

The object of investigation in this study is the level of noticing demonstrated by forty respondents in respect of ten linguistic features. The three research questions serve as the primary driving force for the deliberation in this section. The first research question sought to find out whether or not the respondents' familiarity with the linguistic features defined is congruent. As shown by the outcome of the test administered, the respondents had varied levels of familiarity with the linguistic features investigated. This is explained through the use of two complementary approaches: the number of features noticed by each respondent and the number of respondents who noticed each of the ten features investigated. Through these two windows, the respondents' noticing experience in respect of the defined linguistic features is subsequently brought into a clear perspective.

With regard to the number of respondents who had previously attended to the various linguistic forms, it was observed that some had noticed more than six of the features in the input; others had not noticed any of the ten linguistic features prior to the administration of the test. For example, four respondents claimed that they had never noticed any of the ten linguistic forms in the input, and nine affirmed they had noticed only one prior to the commencement of this study. The respondent who had noticed the highest number of features indicated that he had noticed seven of the features prior to taking the test. So, by assessing the number of features noticed by each of the respondents, the study reveals that the respondents had varied levels of familiarity with the said linguistic forms. As regards the number of respondents who had noticed each feature investigated, the study reveals that some of the features had been noticed more than others. For example, whereas 35 respondents affirmed to have noticed the linguistic form investigated in Sentence One, only 15 claimed to have noticed the feature investigated in Sentence Four. This research question therefore reveals that the noticing experience of the individual respondents in relation to the features investigated is dissimilar; the different features had been noticed variously. This observation confirms Schmidt's assertion that noticing is a "private experience" (1990:132). One important theoretical implication of this observation is that the basic method for determining linguistic features noticed by second language learners is through verbal report.

The second research question interrogates why some of the respondents were able to rewrite acceptable sentences and why others were unable to do so. It is observed that none was able to rewrite all the ten sentences correctly. The highest number of acceptable sentences rewritten by a respondent is 7, and only Respondent 1 exhibited this performance. According to Respondent 1, he had previously noticed in the input the linguistic features inherent in the seven sentences he rewrote correctly. He indicated that he had never encountered the topics involved in the three other sentences. He said this lack might have explained why he could not rewrite those three sentences correctly. This admission gives credence to Schmidt's (2010:721) conviction that "input does not become intake for language learning unless it is noticed". Another theoretical implication deducible from this admission and this conviction is that the concepts "input" and "intake" are not synonymous and cannot be used interchangeably in the field of second language learning as earlier suggested by Corder (1967:165). Rather, input is that linguistic data available for "going in," and intake is that subset of linguistic input that actually helps the acquirer to acquire a second language. In other words, input is what is available for going in and intake is what actually goes in. this observation is probably the genesis of Schmidt's Noticing Hypothesis

which is also rendered as “intake is that part of the input that the learner notices” (Schmidt, 1990:139).

The four respondents who could not rewrite any sentence correctly stated on the test paper that they had never been exposed to the linguistic features whose familiarity was tested through the sentences supplied. The backgrounds of the four respondents were similar; they claimed they never cultivated the habit of attending to linguistic forms in the input, and intimated that their personal attitudes might have resulted in their ‘score zero’ predicament. From the analysis, we observe that one of the four was able to detect that three of the ten sentences were unacceptable in formal written English while the other three made four correct choices. Through verbal report, they explained that they never had the opportunity to be taught the grammar of English explicitly; their pre-tertiary teachers of English only encouraged them to focus more on meaning than on grammatical forms when using the language. An obvious pedagogical implication of the negative effect of the absence of explicit grammar teaching to intermediate learners is lack of declarative grammatical knowledge. Many researchers (Anyidoho, 2002; Bialystok, 1981; Ellis, 1994) are of the view that explicit grammar teaching has a place in second language pedagogy. For example, items 1, 3, and 4 of Ellis’s (2005) *Principles of Instructed Language Teaching* support rule-based learning, focus on form and explicit linguistic knowledge development.

One fellow, Respondent 9, was able to detect that all the ten sentences were unacceptable in formal written English; and yet, he could rewrite only five sentences correctly. During the post-test discussion, he explained that, while in high school, he had the opportunity to attend to five of the features distributed in Sentences 1, 3, 6, 7, and 8. According to him, those were the five sentences he was able to rewrite correctly. He explained that he consciously learnt those forms after he had first noticed them in the input. This effort gives support to Schmidt’s (2010: 725) claim that “noticing is necessary for second language learning, and that understanding is facilitative but not required.” This respondent explained further that “I just had the ‘feeling’ that the other five I could not rewrite were also not good sentences; I had never encountered the correct forms of those structures, and that is why I could not rewrite them correctly.” This explanation is revealing and has relevant pedagogical implications. So, the reason why some of the respondents were able to rewrite the sentences correctly is that they had previously attended to the correct forms of those features in the input prior to the test; those who could not rewrite the sentences correctly failed to do so because they had not previously noticed those forms in the input.

The third research question sought to find out whether there is a direct relationship between the linguistic features that the respondents had previously noticed and the sentences they could rewrite correctly. In other words, it interrogates whether there is a correlation between the noticing index generated and the other two knowledge indices in respect of the linguistic features investigated: implicit knowledge index and explicit knowledge index. To facilitate this discussion, we approximate the respondents’ implicit knowledge of the linguistic features investigated to their ability to detect the correctness or otherwise of the ten sentences. Their explicit linguistic knowledge corresponds with their ability to rewrite the sentences correctly.

The study indicates that each respondent’s noticing index of each of the linguistic features investigated relates directly to the corresponding explicit linguistic knowledge index. For example, Respondent One, who indicated that he had noticed seven of the linguistic features previously, was able to rewrite those seven sentences correctly, no more no less. He pointed out during the post-test verbal report session that he rewrote seven sentences correctly because he had previously noticed the grammatical rules violated in those sentences. He further clarified that he could not rewrite correctly the sentences containing structures he had not previously attended to. Conversely, the four respondents, 19, 20, 35, and 37, for example, who claimed that they had never noticed the correct forms of any of the ten features, could not rewrite any of the sentences correctly. The four explained that they could not rewrite the sentences because they had not previously attended to the grammatical elements contained in those sentences. This means that because these four respondents had never noticed these features in the input, their noticing index in respect of the features was 0.0. It also means that because they could not rewrite any of the ten sentences correctly, their explicit linguistic knowledge was 0.0%. So, their noticing index coincided with their explicit linguistic knowledge index, and this direct connection between noticing and explicit knowledge is true for all the forty respondents in respect of the ten linguistic features investigated. The direct relationship between noticing and explicit linguistic knowledge observed in the current study further investigation. This observation, however, confirms Schmidt’s (2010: 721) assertion that “people learn about the

things they pay attention to and do not learn much about the things they do not pay attention to." A pedagogical implication derived from this observation is that, in second language contexts, intermediate learners should be equipped not only with procedural linguistic knowledge but they should be equipped with declarative linguistic knowledge as well because this knowledge enables intermediate second language learners to edit their own writings.

As regards the association between the respondents' noticing behaviour and their implicit knowledge, there appears to be no direct relationship observed. For example, the noticing index generated for both Respondents 3 and 18 is 1.0 but Respondent 3 recorded implicit knowledge index of 80% while Respondent 18 recorded implicit knowledge index of 40%. Also, the noticing index generated for Respondents 5 and 39 were 1.0 and 6.0 respectively even though they both recorded the same implicit knowledge index of 70%. So, the respondents' noticing index of each of the ten linguistic features is lower than the corresponding implicit linguistic knowledge index, and the difference between the two indices is narrow in the case of some respondents but wide in the case of others. This observation reflects the group analysis where the group's implicit linguistic knowledge index in respect of Sentence One, for example, is 87.5%, but its corresponding noticing index is 6.25; the indices in respect of Sentence Ten are 37% and 0.5 respectively. So, there appears to be no direct association between the respondents' noticing behaviour and their implicit knowledge in respect of the linguistic features investigated. This point also suggests that there are certain linguistic structures that people are able to use correctly but which structures they had not noticed in the input. This suggestion requires further investigation.

6. Conclusion

This paper sought to present one perspective of the conversation on noticing through the use of data sourced from adult users of English in Ghana. Both the research team and the respondents resolved to be resolute and neutral in their quest to source and to supply information required resulting in the findings and conclusions presented below. First, a direct relationship was observed between indices generated for noticing and those generated for explicit knowledge in respect of the linguistic features investigated, and this relationship is predictable; once the explicit knowledge index was given, the noticing index was predicted, and vice versa. The values observed are the same even though they appeared in two different forms; noticing indices appeared in decimal fraction while explicit knowledge indices appeared in percentage. However, a comparison of noticing and implicit knowledge indices showed no direct relationship; the figures appeared to be haphazard.

Second, in the midst of this chaotic relationship between noticing and implicit knowledge, it is observed that the implicit knowledge indices were constantly higher by unpredictable margins than those for noticing. This implies that acquisition is possible without noticing, but this may not necessarily be true for learning. Third, structures the second language learners were able to rewrite correctly were those that contained linguistic elements they had previously noticed. The study, therefore, concludes that early advanced learners of English in second language contexts have varied noticing behaviour patterns and experiences. Additionally, they may have implicit knowledge of linguistic features they had not previously noticed, but they need to notice in order to have explicit knowledge of linguistic features. Finally, the study suggests that second language learners usually learn what they have first noticed in the input, and that which has been noticed usually results in learning. These findings confirm the noticing hypothesis, the conviction that "input does not become intake for language learning unless it is noticed" (Schmidt's 2010:721). They also have implications for the teaching of English in second language contexts.

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Appendices

Appendix A: The Short Test Administered

In the space provided for each question:

- i. state whether the sentence is correct or incorrect in formal written English (1 mark).
- ii. rewrite only the incorrect sentence correcting any errors you detect (for 1 mark).
- iii. say whether or not you had previously noticed the grammatical feature being tested.

1. The Almighty God who started with you he will end with you.

- a.
- b.
- c.

2. The lecturer said he will travel tomorrow.

- a.
- b.
- c.

3. One of the people who tells lies about lecturers has been exposed.

- a.
- b.
- c.

4. Either the Directors of education or I are to blame.

- a.
- b.
- c.

5. After considering the proposal for two hours, it was rejected by the directors.

- a.
- b.
- c.

6. The meeting was held to arrange for the football match in the office.

- a.
- b.
- c.

7. It is strange that the shooting of the armed robbers provoked the politicians.

- a.
- b.
- c.

8. I think our son is now matured to marry.

- a.
- b.
- c.

9. All the students were compelled to vacate from the hall.

- a.
- b.
- c.

10. I thought a good university degree would enable me get a good job.

- a.
- b.
- c.

8.1 Appendix B: Test Item Analysis Table

R	S1	S2	S3	S4	S5	S6	S7	S8	S9	S10	SSC	ASR	NFN	100%
1	√√y	√xn	√√y	√√y	x-n	√√y	√√y	√√y	√√y	√xn	9	7	7	80
2	√√y	x-n	√√y	√xn	x-n	√√y	√√y	x-n	√√y	x-n	6	5	5	55
3	√√y	x-n	√-n	√-n	√xn	√-n	√-n	x-n	√-n	√xn	8	1	1	45
4	√xn	x-n	√-n	√xn	√-n	√-n	√√y	√-n	√-n	x-n	8	1	1	45
5	√-n	√xn	√-n	x-n	√xn	x-n	√√y	x-n	√xn	√xn	7	1	1	40
6	x-n	√√y	x-n	√xn	√-n	√xn	√√y	x-n	√-n	x-n	6	2	2	40
7	√√y	x-n	√xn	√xn	x-n	x-n	√√y	x-n	√xn	√xn	6	2	2	40
8	√√y	x-n	x-n	√-n	√xn	x-n	x-n	x-n	√xn	√xn	5	1	1	30
9	√√y	√xn	√√y	√xn	√xn	√√y	√√y	√√y	√xn	√xn	10	5	5	75
10	√√y	√xn	√√y	√xn	x-n	√√y	√√y	√√y	√xn	√xn	9	5	5	70
11	√√y	√xn	√√y	x-n	x-n	√√y	√√y	√√y	√xn	√xn	8	5	5	65
12	√√y	x-n	√√y	√xn	x-n	√xn	√√y	x-n	√√y	√√y	7	5	5	60
13	√√y	√√y	√√y	--n	√xn	√xn	√√y	x-n	√√y	x-n	7	5	5	60
14	√xn	√√y	√xn	x-n	√xn	x-n	x-n	x-n	√xn	x-n	5	1	1	30
15	√√y	x-n	x-n	√xn	x-n	x-n	√√y	√xn	x-n	x-n	4	2	2	30
16	√xn	x-n	√xn	√xn	--n	√√y	√xn	--n	--n	--n	5	1	1	30
17	√√y	√xn	x-n	√xn	x-n	√√y	√√y	√√y	√√y	x-n	7	5	5	60
18	x-n	√xn	x-n	x-n	x-n	√xn	x-n	√√y	√xn	x-n	4	1	1	25
19	√xn	x-n	√xn	√xn	x-n	x-n	x-n	x-n	√xn	x-n	4	0	0	20
20	x-n	x-n	√-n	√xn	√-n	x-n	x-n	x-n	√xn	x-n	4	0	0	20
21	√√y	√√y	√xn	√xn	√-n	x-n	x-n	x-n	√xn	√xn	7	2	2	45
22	√√y	x-n	√xn	√xn	√xn	x-n	√√y	x-n	√xn	x-n	6	2	2	40
23	√√y	√xn	√xn	x-n	x-n	√xn	x-n	√√y	√xn	x-n	6	2	2	40
24	√√y	√√y	x-n	√xn	x-n	√xn	√√y	√xn	√√y	√xn	8	4	4	60
25	√xn	√xn	√√y	√xn	x-n	√√y	x-n	√xn	√√y	x-n	7	3	3	50
26	√√y	√√y	x-n	x-n	√xn	√√y	√√y	√-n	x-n	x-n	6	4	4	50
27	√√y	√xn	√√y	√xn	x-n	x-n	√xn	x-n	√xn	√xn	7	2	2	45
28	√√y	x-n	√√y	x-n	√xn	x-n	x-n	√√y	√√y	x-n	5	4	4	45
29	√xn	√√y	√xn	√xn	x-n	x-n	√√y	x-n	x-n	√√y	6	3	3	45
30	√√y	√xn	x-n	x-n	x-n	√√y	√√y	√√y	√xn	x-n	6	4	4	50
31	√xn	x-n	√√y	√√y	x-n	√xn	√√y	√xn	√xn	x-n	7	3	3	50
32	√√y	x-n	√xn	√xn	x-n	√xn	√√y	x-n	√xn	x-n	6	2	2	40
33	√xn	x-n	√xn	√xn	x-n	√xn	√√y	x-n	√xn	x-n	6	1	1	35
34	x-n	√xn	√xn	√xn	x-n	x-n	√√y	x-n	x-n	√xn	5	1	1	30
35	√xn	√xn	x-n	√xn	√xn	x-n	x-n	x-n	x-n	x-n	4	0	0	20
36	√√y	√xn	x-n	√xn	x-n	√xn	√xn	x-n	√√y	x-n	6	2	2	40
37	x-n	√xn	x-n	x-n	√xn	√xn	x-n	x-n	x-n	x-n	3	0	0	15
38	√√y	√xn	--n	√xn	x-n	x-n	√xn	x-n	√√y	√xn	6	2	2	40
39	√√y	x-n	√√y	√xn	x-n	√√y	√√y	√√y	√√y	x-n	7	6	6	65
40	√√y	x-n	√√y	√xn	x-n	√√y	√√y	√√y	√xn	x-n	7	5	5	60
NI	6.25	1.75	3.25	0.5	0	3.0	6.0	2.75	2.75	0.5	6.25	2.68	2.68	44.63
IKI	87.5	57.5	70	75	37.5	62.5	72.5	42.5	82.5	37.5				
EKI	62.5	17.5	32.5	5	0	30	60	27.5	27.5	5				