A Probe into Adaptive Transfer across Writing Contexts: A Case of English for General Academic Purposes (EGAP)

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Abstract

In an effort to expand the disciplinary discussions on transfer in L2 writing and because most studies have focused on transfer as reuse and not as an adequate adaptation of writing knowledge in new contexts, the present study as the first of its kind aimed to explore the issue of adaptive transfer in English for General Academic Purposes (EGAP) writing course. The study thus focused on types of adaptive transfer across disciplines and the processes involved in achieving them. The data were collected through interviews conducted on writing samples both from the participants' EGAP class and their other courses in the university (non EGAP). The results showed five categories of adaptive transfer including 'organizing, grammar refining, rephrasing, metaphorizing, and resource using'. Also, the analysis of the data demonstrated a variety of processes involved in the accomplishment of adaptive transfer, which all pointed to the multidimensionality of evaluation and re-evaluation that the writers conducted to achieve their composing potential. Additionally, the results revealed slight disciplinary inconsistency for the categories of adaptive transfer detected, with the English Language enjoying the highest and Electrical Engineering the lowest frequency of such transfer. The results imply that EGAP classes can create a directive condition for the enhancement of learning transfer.

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1. Introduction

Transfer of learning has for long remained an important component of education systems as it is expected to be the flow of the learned skills, be it specific or general, into the prospective human behavior. Detterman (1993) views the study of transfer of learning central to the grasp of human involvement in the application of past learning in a new context. Approvingly, Bradford and Schwartz (1999) construe transfer of learning as the core of any educational system. Also, in ESL programs, writing instruction is believed to result in some outcomes which can be applied in other academic courses as learning transfer. To date, such a transfer of learning has been characterized as the positive direct effect of learning in one situation on the identical conditions of another situation or problem (DePalma & Ringer, 2011) or what Leki and Carson (1994) have seen as the transcendent goal of ESL writing. This view indicates that ESL academic writing instruction in "one context or with one set of materials impacts on performance in another context or with another set of materials" (Perkins & Salomon, 1994, p. 6452). On balance, the issue of transfer in L2 writing has extensively been equated with reuse or direct application of some learning elements in identical contexts. Matsuda (1997) associates transfer as reuse of learned writing knowledge with "static theory of L2 writing" (pp. 242-247) in which the writer is prewired to function in accordance with the background knowledge. It is important to note that this static theory disregards the agency in writing, considering writers as encoders while readers as mere decoders of the texts. Beech (1999) argues that this static notion of transfer presupposes stability of tasks as a precondition for realization of transfer, which is obviously incorrect.

More recently, transfer of learning has been accorded a new significance beyond the simple reuse of the materials learned in familiar contexts. Perkins and Salomon (1994) contend that learning elements in one particular context are not subjected to transfer to the same contexts only, but are prone to be conveyed to and reshaped in unfamiliar contexts as well. This dynamic theory of writing transfer basically originates in the human adaptable character which can undergo fining and modifying processes to achieve a different purpose and has been called 'adaptive transfer' (DePalma & Ringer, 2011). Being critical of transfer as reuse of learning, Bradford and Schwartz (1999) also acknowledge that such a perspective is a blunt instrument for measuring small changes in learning. They argue that focus on certain transfer objectives tend to ignore the important mental processes that learners use to transfer prior learning. Beech (1999) also subscribes to a sociocultural notion of transfer and asserts that transfer metaphor should help us understand the continuity and transformation that we experience to

become someone new. He presents a construct that places learners and social organizations into a mutual and constitutive relationship over time. In fact, he asserts that social activities and actors can have mutual bearing on each other, i.e., social activities may be transferred in their original forms into new contexts, but are also very much likely to be used as resources which are transformed into new ways as they can be employed as frames of reference or patterns of thought on which to rely in the construction of new premises.

Wenger (1998) also points out that importation of learning elements from one community into the next is not merely unchanged and stable reuse. Rather, learning elements from one context or course find somehow their ways into the novel contexts through coordination, translation, and alignments between various learned elements. Calling this notion 'brokering', Wenger (1998) notes that learners not only carry over exact learning elements but also reproduce their own new acquired behaviors. For him, at the junction of communities of practices "old ideas find new life and new ideas propagate" (Wenger, 1998, pp. 254-255).

The above review clearly shows that adaptive transfer moves away from the narrow conceptualization of direct transfer as explicated in the L2 writing static theory and presupposes a dynamic model which accepts fluidity and reformulation in the writing skills (Lobato, 2003). The assumed fluidity is individual specific, and is affected by a number of factors such as genre, class, and gender defined within a space of interaction between writer and reader (Matsuda, 1997). From this dynamic view of writing, L2 writers are likely to make their own strategic and creative choices to achieve their rhetorical purposes (Canagarajah, 2006b). This means that writers have the agency to utilize their language learned resources to produce new ways of knowing, doing and writing. While concept of transfer in L2 writing has primarily and predominantly emphasized the direct use of learned skills (Wardle, 2007), adaptive transfer analysis is an attempt to account for the adaptation of skills that learners make to convey their learning into new situations.

To date, though much has been written and distributed on direct transfer or reuse of learning in L2 writing the indirect or adaptive transfer of learning has been left untouched (DePalma & Ringer, 2011). To delineate the issue of indirect or adaptive transfer as it transpires in the writing activities of the L2 learners, and instigated by the important point that transfer of learning can occur indirectly (or adaptively) as well, and also due to the fact that no study, to the best of our knowledge, has so far practically dealt with the issue of adaptive transfer, this study tried to bridge the gap and discover the kinds of indirect or adaptive transfer that occur in L2

writing and also concentrate on how adaptive transfer is adjusted to serve the learners' new contexts of practice. Thus, the following questions are addressed in the study:

1. What are different kinds of adaptive transfer EGAP learners carry over into new contexts?
2. How do EGAP learners reshape or reformulate their prior learning into adaptive transfer?

2. Methodology

2.1 Design and participants

In order to draw a clear picture of the phenomenon, i.e., transfer, occurring in the natural context, the present study relied on a qualitative design in a real setting of learning. The design incorporated the writing instruction supposed to be affecting participants' performance on writing tasks and thus their transfer of learning. This study was undertaken in 2009-2010 at the Education Center, Isfahan University of Technology, Iran, and comprised 13 students who chose to participate in the EGAP writing class. The students were majoring in different fields of study including Chemical engineering, Electrical engineering, Psychology, English language. Except for the students of English major, other participants had not passed any other L2 writing courses but had learned the language at various English institutes for a period of 6 to 12 institutional terms. Out of interest, they are also used to individually study their program courses through the English textbooks and also report their written projects in this foreign language. Moreover, 3 of the participants (2 electrical engineering and 1 chemical engineering students) out of the total 13 were engaged in their final projects to fulfill as a partial requirement for their graduation. Their age ranged from 21 to 25 years, 8 were female and 5 male and all spoke Persian as their L1.

The writing unit was offered as an elective, extracurricular course and was to be taken by volunteers regardless of their university major or background. Thus, this natural context providing an available sample of learners inspired the researchers to delve into the conditions further for transformative insights concerning the multidimensional issue of L2 writing. In fact, this multidisciplinary setting was seized as a propitious opportunity for launching the study by which we could examine the interactional effects of transfer and disciplines as two important variables. The use of different disciplines in the present study and the reason why students of different majors are brought together is because transfer is very likely to be subjected to differences in the disciplinary requirements, thus affecting the way learning is transferred across distinct disciplines (Royer, Mestre, & Dufresne, 2005).

2.2 Materials

The instructional textbook used in this study was *The St. Martin's Guide to Writing* (Axelrod & Cooper, 2004). The book includes some general writing exercises such as arguing a position, proposing a solution to a problem and also some methods of development such as comparing/contrasting, defining and classifying. The rationale behind using this book was that the book lists a number of different learning elements for different disciplines such as ' describing visually, stating personal significance, narrating, using similes, framing, and using temporal transitions', and thus these outcomes could be used as targeted learning goals. The targeted learning goals (considered as direct transfer) have been presented in another paper. And, this study as part of that research project is intended to solely focus on transfer of elements which are indirectly or adaptively used in composing contexts.

2.3 Procedures
2.3.1 Instruction

The first researcher who already had over ten years of experience in teaching writing courses at both undergraduate and graduate levels taught the course. Each session involved reviewing and enhancing the book contents which covered a wide range of topics on writing including remembering an event, explaining a concept, justifying an evaluation, speculating about causes, analyzing stories, arguing a position, proposing a solution, and writing profiles. Those aforesaid general topics were accompanied by a number of diverse collaborative activities initiated by the teacher and followed by the learners. These specific activities included setting goals for writing, outlining, planning, drafting, working with sources (such as quoting, and paraphrasing), summarizing, weaving materials into the sentences, formulating thesis statements, revising (editing and proofreading) and finally critically evaluating the compositions. As for their writing activities, the learners were required to individually compose, collaboratively revise, and proofread their own drafts on different topics. The sessions were mainly held in the English language with rare switches to Persian, especially wherever a breakdown in conveyance of message was likely. Apart from the instruction of the book contents, the teacher was also involved actively in reviewing and revising the students' drafts to improve and finalize them. The topics students wrote on for each session varied from one type of writing such as narrating to another such as classifying, representing different writing typologies not considered in the present study.

The study continued for 16 weeks. Haskell (2001) believes that transfer cannot happen immediately after instruction, and takes some time and chance to be achieved properly. Thus, the instruction was continued for a

semester and was expected to give enough time to the students to transfer their learning. A summary of weekly activities can be seen in the following table.

Table 1. Description of writing course

Week	Description of Activities
1 & 2	Introduction; Remembering an Event: Practicing the Genre; Guide to Reading; Guide to Writing; Evaluating the Draft; Invention Strategies
3&4	Activity: Writing Profiles; Guide to Reading; Guide to Writing; Evaluating the Draft; Reading Strategies
5&6	Activity: Explaining a Concept: Guide to Reading: Guide to Writing: Evaluating the Draft; WRITING STRATEGIES: 1. Cueing the Reader; 2. Narrating
7&8	Activity: Arguing a Position: Guide to Reading: Guide to Writing: Evaluating the Draft; WRITING STRATEGIES: 3. Describing; 3. Defining; 4. Classifying; 5. Comparing and Contrasting; 6. Arguing
9&10	Activity: Proposing a Solution; Guide to Reading; Guide to Writing; Evaluating the Draft WRITING STRATEGIES: 7. Analyzing Visuals; 8. Designing Documents
11&12	Activity: Justifying an Evaluation; Guide to Reading: Guide to Writing: Evaluating the Draft; Writing in Business and Scientific Genres; WRITING FOR ASSESSMENT
13&14	Activity: Speculating about Causes; Guide to Reading: Guide to Writing: Evaluating the Draft RESEARCH STRATEGIES: Planning a Research Project; Finding Sources and Conducting Field Research; Evaluating Sources; Using Sources to Support Your Ideas; Citing and Documenting Sources in MLA Style.
15&16	Activity: Analyzing Stories. Guide to Reading; Guide to Writing: Evaluating the Draft; WRITING AND SPEAKING TO WIDER AUDIENCES: Multimedia Presentations; Working with Other Individuals; Writing in One's Community: Sentence Boundaries; Grammatical Sentences; Effective Sentences; Word Choice; Punctuation; Mechanics.

2.3.2 Data collection
Transfer of learning was detected in the writing samples that the students handed in to their teacher both from the EGAP class and the other courses of their own majors where their university instructors encouraged and accepted the projects to be submitted in English. Since the field of study is taken as a potential factor in the way learning is transferred to new contexts (James, 2010), this study thus incorporated discipline as a variable and studied it to illuminate the dimension of the transfer further. First, the skills used directly, otherwise known as *direct transfer*, were extracted in the samples through interviews which were audio-recorded and later transcribed for the

learning skills and outcomes. Another step concerning direct transfer was taken to investigate ten targeted learning elements taught in the classroom apart from general learning elements studied through interviews. The direct transfer was investigated in both English and Persian samples of writing and also across different tasks and disciplines. The above procedure led to the extraction of *direct transfer* of learning, reported in another paper. It must be noted that the categories of targeted outcomes considered as *direct transfer* were borrowed from James' study (2010). However, the typologies of *indirect transfer* (otherwise called adaptive transfer) and also categories of processes both presented in the current paper have been specific to this study and consummated through the analysis and synthesis of the data-driven findings. The following description is particularly related to the data for the present study.

After the extraction of *direct transfer categories* and actually elapse of two months, the researchers embarked on the analysis of *indirect use of learning* (otherwise known as adaptive transfer), which is the main focus of this study. The samples (English ones only) were all subjected to the retrospective analysis through interviewing in search of the learning elements not *directly* taken from the EGAP writing course. The 13 learners all agreed to participate in the interviews for all their writings. As the direct transfers had already been extracted and underlined in all the samples, in this new phase of adaptive transfer detection, the 13 participants were interviewed for the possible indirect use of their learning in the intact parts of their writings. First, referring to particular intact parts of the writings, not already identified as transfer, the interviewers would ask them if the intended part was also a transfer of learning from EGAP or not. The interviewers (actually the researchers) tried to bring their past learning from EGAP to participants' attention again by reviewing the important points taught in that class. Upon the detection of a possible indirect transfer, the next step was to illuminate how those learners modified or reformulated their previous learning into the new and adaptive context. Thus, the interviewers asked the question of how the learners managed to conform to the demands of the new condition. This phase was supposed to provide an insight into the *processes* involved in the reformulation of learning, considered essential in the study of adaptive transfer (DePalma & Ringer, 2011). The participants' explanations on each case of adaptive transfer were audio-recorded for later transcription and analysis. It is worth mentioning that the interviews conducted lasted on average about 13 minutes each, totaling 728 minutes for the total samples. The interviews were all audio-recorded to be used for the analysis of data. It must be noted that not all intact parts of the writings were identified as indirect transfer. Rather, some

parts (from intact ones) were claimed not to have emanated from the EGAP (about 63%). It has to be reiterated that transfer of skills in this study refers to the learning elements from the textbook which students carried over into new contexts of writing (consisting of (1) students-reported ones, (2) ten targeted learning elements, both considered as direct transfer; and (3) the reformulated or redefined learning elements considered as indirect or adaptive transfer), and processes are those explanations that students provided talking about how they redefined or reformulated their past learning into novel and dissimilar composing tasks.

2.3.3 Writing samples

Participants submitted a total of 39 samples from their writing class (EGAP). The EGAP samples were all written at the end of the semester as we expected the participants to have enough time to make use of or transfer what they had learned before. Further to that, evaluating transfer over time would conform to the idea that 'significant transfer requires time to incubate; it tends not to occur instantaneously' (Haskell, 2001, p. 46). Similarly, Foxon (1994) contends that over-time methods of transfer analysis are preferable to rigid one-time measures that are common in research on transfer because such rigid methods are very likely to miss the subtleties of the transfer. For example, they may inadvertently fail to track down which learning outcomes may transfer or how often transfer occurs.

The participants also handed in 29 samples of writing from their own fields of studies (non EGAP), 12 of which were in Persian and 17 of them in English. In total, the analysis in this study included 39 samples from EGAP class and 17 from non EGAP (samples from the university projects) with the exclusion of Persian samples. The writing samples varied in content, length, organization and format, with 12 being one page, the rest more (up to 3 pages) and also of different kinds of tasks, e.g., reports, research projects, summaries of reading, case studies. Table 2 below displays a summary of the number of writing samples and words used in this study.

Table2. Writing samples' specifications

No. of Participants	EGAP samples in English	Non EGAP samples in English	Total Samples	Total No. of Words	Average Words Per Sample
13	39	17	56	31976	571

2.3.4 Data analysis

To analyze the data, first the recorded interviews (concerning adaptive transfer and their processes) were transcribed and carefully written down. Then the interview transcripts were checked for the kinds of transfer that the

learners had talked about. The learners' discussions of adaptive transfer were first expressed in some general titles (e.g., simplifying others' views, and rewriting the theories). After the interview based analyses were converted into clear general titles, they were juxtaposed and compared for the resemblances running through them. Those titles with the maximum similarity were taken to represent the same theme (e.g., the two above-mentioned titles were reduced to the category of 'rephrasing' as a kind of adaptive transfer). In this way, all other identified general titles were further integrated and reduced to the types of adaptive transfer occurring in the writing samples.

The next step focused on how adaptive transfer was achieved. Again, the processes learners talked about were extracted, expressed in clear wording, evaluated for similarities, and then combined to give us some general categories. As an example, the very category of 'Organizing' as a general type of adaptive transfer was achieved through different processes which were combined together to come up with general running titles. One of these processes is termed 'seeking varied facets of topic' which was the result of the blended views of the participants talking about the way they relied on their conflicting ideas to produce and develop the topic.

After two months, in order to check the consistency of the procedure the researchers repeated the analysis of about 20 percent of the writings independently, which showed an agreement index of 95 percent. The differences were reconsidered and resolved.

3. Results

The analysis of the data thus presented the following results listed based on the order of frequency. Note that the actual examples provided are from different disciplines to show whether EGAP settings have any bearing on non EGAP contexts. This study basically cast light over the claim that transfer of learning and learners create some mutual constitutive relationship over time and tend to cross over from one context to an apparently incompatible one (Beech, 1999). This idea can accounted for by the view that human mind has a regenerative capacity and can go beyond the limits of certain labels such as EAP or EGAP.

As reviewed above, the first inquiry concerned the typologies of the adaptive transfer that learners of the EGAP class managed to carry over into their composition tasks, which come below.

3.1 Types of adaptive transfer
3.1.1 Organizing
This type of adaptive transfer referred to the different ways the participants went through to organize their texts as indirect reapplication of their previous learning. A wide variety of issues related to the overall body structure (i.e., moving from particulars to generals, paragraphing, focusing on major and minor points, and arranging ideas sequentially) were used in their composing tasks. For example, the following participant attributes his use of evidence in the first paragraph to the learning outcome of the course focusing on the support sentences. All examples in this part and the following are rough translations of participants' talks in response to the question if the particular part of their writing was related indirectly to their EGAP.

The following is part of the text which was investigated by the interviewer if it was related to the course:

<There are different methods of language teaching. Some have already fallen into disfavor. However, some have survived criticisms. The former involves grammar translation ....>

Participant's response (No. 12, Major: English language): Yes, this was basically based on the idea borrowed from the course which would require sensible links of meaning among the parts of text.

3.1.2 Grammatical refining
This category of adaptive transfer concerned the linguistic elements used to develop the quality of language. These elements included appropriate use of vocabulary, verbs, tenses, and transitions. The following participant thinks that his concern for tenses was re-description of a learning element (from EGAP class):

The text about which the question of transfer (concerning tense) was raised:

*<Circuit breakers **had been** of high significance even before the electrical devices **spread** around.>*

Participant's reaction (No. 6, Major: Electrical Engineering): Yes, sure. This was actually the extension of past perfect tense focus to other similar tense related points. In here I tried to match the two tenses and the way they are sequenced.

3.1.3 Rephrasing
This category dealt with the participants' efforts to change and modify the ideas or skills already learned from EGAP course. Generally, this type of adaptive transfer involved rewriting and simplifying tasks. An example of such a category follows:

This is the sentence which was investigated in regard to adaptive transfer:

<Counseling can help you to rediscover your own path, assert your own needs , .…>

Participant's response (No. 9, Major: Psychology): This was based on what I learned from my course, which would ask me to change the words of a quote in order to avoid citation or plagiarism problems. In this sentence, I also reworded the above notion taken from a book.

3.1.4 Metaphorizing

Through this category of adaptive transfer, the participants tried to represent a concept or idea mentally or symbolically, showing the relationship, links, organization, or hierarchy. Metaphors actually present some dimensions, e.g, visual, to the concepts and make them more tangible. The following is an example for this category:

Interviewer: Please tell me if you arrived at such a view of order (paragraphs 1 to 5) in relation to your EGAP course!

Participant's response (No. 12, Major: English Language): Look, when you are going to build a structure, ok, composing a piece of writing, I think, is also a structure, you need to consider the strength along with the overall standing shapes and positions; I mean every brick or block has to be placed in a special order to achieve the qualities. I think the course showed clearly that writing is exactly like such a structure. So in my writing about a good language test, I tried to show the order and relationship.

3.1.5 Resource using

In this category, the participants talked of different ways and skills they indirectly made use of to achieve writing. Such skills included collecting data, referencing, summarizing and use of quotes. The following is an example in this category:

Part of the text where 'referencing' was investigated for the possible transfer from EGAP:

<Ethnography of speaking (cf. Hymes, 1981) was later expanded into ethnography of …..>

Participant' response (No. 13, Major: English Language). My writing course put stress on the proper documenting of sources used. I thus followed on the issue at the end of each piece of writing. This way of referencing is also related to the course I studied, and as you can see I have used 'cf' here to create the relevant document; this particular point was not taught in the course.

3.2 Processes of achieving adaptive transfers

This part addresses the participants' responses to the second question of how they managed to reformulate their previous learning. As stated before, participants were asked to focus on the processes of changing their former skills learned in EGAP. Thus, in the analysis of interview transcripts for each category of adaptive transfer explained in the first question there were a number of different processes all referring to the respective categories of transfer. The list below displays the results for this investigation in order of frequency:

3.2.1 Organizing

As for the first category of transfer or 'organizing', the subjects explained themselves in the following ways:

3.2.1.1 Seeking varied facets of topic

To generate the ideas for the development of topics, some participants maintained that they inquired for some relevant ideas from both their classmates and also the print resources available. They tried to compare and contrast the views before coming into any conclusion by focusing on the hierarchy of links in the presented topics. This act helped determine the draft plan for the task. The following participant talks about how he finally made his decision to write on his topic:

Participant (No. 11, Major: English Language): In order to write about the advantages of travelling by plane, I spent some time thinking and also talking it over with my classmate to have an orderly picture of my writing.

3.2.1.2 Avoiding scrambled organization

Participants also relied on the knowledge of the past in order not to get disordered. Though the past material basically drew their attention to the organization, the participants enhanced the idea and exercised avoidance of disorganization as well.

The participant below again explains how she managed to write on the topic 'biochemistry' and avoid unsystematic organization.

Participant (No. 2, Major: Chemical Engineering): Remembering the text progressive development from my class, I thought about how my writing should have possibly gone astray, not conforming to the standard of orderliness.

3.2.1.3 Modeling

By this process, two participants set directions for their new composing tasks based on their previously learned materials. The participants actually shaped some patterns of how to organize their writing projects.

The following participant shows how she organized her writing on 'behavioral disorder'.

Participant (No. 10, Major: Psychology): In retrospect and based on my writing class, I imagined a large plan with the beginning and ending into which other elements were interlinked.

3.2.1.4 Backtracking

This refining activity referred to the participants' iterative returns to what they had developed in their writing format to see if it fit into the previously learned knowledge. This process of adapting the past knowledge of formatting was viewed as part of the general act of revising.

The following is a participant's reaction to the question of how he formatted his writing on 'Language Learners' Potential Errors':

Participant (No. 13, Major: English Language): To guarantee that my writing was formatted correctly, I had to see it from beginning to the end again and again. So, I sometimes wrote some parts again and some other times changed the place of some parts to come up with the best order.

3.2.1.5 Linear sequencing

Two participants also claimed that they had learned from their EGAP course the gradual progression of the topics from what was basic and essential to the expansion of the ideas all reflected through linear arrangement of different sections.

This is an example of a participant revealing his efforts to organize the writing:

Participant (No. 5, Major: Electrical Engineering): I had the knowledge from my EGAP to organize the text, usually beginning from an introduction and ending up in conclusion. This kind of knowledge was also used for the step by step progression of the ideas in each independent part.

3.2.2 Grammatical refining

The second category of adaptive transfer was related to the refining process of the 'grammatical elements' in the writing tasks. The participants talked about the process how to adopt this adaptive transfer through the following general headings.

3.2.2.1 Extending accuracy to verbs

In this particular category, the participants showed their backward reliance on the EGAP book description of the grammar and the need for accuracy. They extended the idea to verbs. The verbs were attended to in terms of sequencing of two verbs, subject-verb agreement, changes in the verb forms, and also the verb patterns that different types of verbs followed. This is the reaction on the part of a participant in regard to the use of the verb 'prevent'.

The part of text used in the following example:

*<Flow conditions with different frequencies can differently **prevent heat from** enhancing further ....>*

Participant (No.3, Major: Chemical Engineering). I applied the idea of correct syntax to the correct use of verbs as well. So, I, for example, came to understand that the verb 'prevent' is used in a special pattern, i.e., verb+noun+from+gerund).

3.2.2.2 Linking texts properly

This category is considered as the participants' attempt to redefine the learning outcome of 'using temporal transitions', to include in it the vertical links which could accomplish coherence across different parts of the texts. The response below was given to how the contrast was achieved in the following sentence:

<…… ***On the contrary***, the high pressure boilers require constant monitoring to ensure safety.>

Participant (No. 4, Major: Electrical Engineering). I already knew from my writing course about correct use of temporal transitions, so I also thought about others, e.g., contrast words as I have one in this sentence (above mentioned sentence).

3.2.2.3 Choosing proper vocabulary items

Following their sensitivity to the tenses supported in their EGAP book, two participants adjusted the view to apply to the vocabulary choice as well. They reported that they had improved the overall grammar of their texts by singling out the most appropriate vocabularies for their purposes. More is found in the following example as a response to the question of how the writer's purpose was attained:

Participant (No. 13, Major: English Language). I sometimes wondered if the verbal phrase, 'make or commit a mistake' would best meet the sentence requirement (Sentence: The mistake made by the learners in the class needs teacher's special attention.). In this particular case, I thought the word 'made' is better than 'committed', believing that with the former I am on the safe side and maybe the latter can be reserved for wrong doing.

3.2.2.4 Comparing L1 and L2

In trying to achieve precision in their writing, one of participants had been indirectly inspired by the role that their L1 could have played in L2. Thus, they had been inclined to reflect on the inter-lingual differences of different kinds to improve their linguistic quality.

This is the part of writing that brought forth the following reaction:

<To teach translation, teachers need to ***take advantage of*** both pedagogical and real translations.>

Participant (No. 11, Major: English Language). Very often I tried to take Persian- English interaction into account; this example (take advantage of) was first written as 'take advantage from' (based on Persian), but later through comparison between English and my mother tongue I corrected it

3.2.3 Rephrasing
The third type of adaptive transfer was recognized as 'rephrasing', which had been achieved through the following processes as reported by the participants.

3.2.3.1 Rewriting, simplifying and replacing others' ideas
The participants pointed out that for some cases they changed the authorities' words, sometimes simplified and some other time replaced their special terminologies used. Here is an example of how to do rephrasing:

Participant (No. 1, Major: Chemical Engineering). I used this notion clearly because some authors had already developed in their papers but I tried to change 'Green Chemistry' in this sentence into 'the chemistry which values environmentally friendly measures'.

3.2.3.2 Personalizing others' ideas
Participants reported that because the EGAP considered exact transfer of others' views, which are not properly cited, as plagiarism they decided to use those views in their own personal wordings while skipping the proper citing of sources. Example:

Participant (No. 7, Major: Electrical Engineering): Regarding this sentence (Sentence: Computer and electrical engineering together emphasize designing and developing new generations of computers.), I should admit that I used it as my own words as I thought that the idea is general and does not need documentation, while it was truly and a bit differently explained in one of sources I had read.

3.2.3.3 Reifying an idea
One participant claimed that in order to make some ideas clear she tended to transform a theory into some tangible and concrete statements. This process of rephrasing is clearly seen in the following:

Participant (No. 12, Major: English Language). I tried to explain the theory of 'scaffolding' in teaching and learning. As you can see this sentence (Sentence: Learning another language is best achieved if you ask relevant questions or cooperate in learning or use pictures) is supposed to concretize the scaffolding theory, which is usually explained through verbal, procedural or visual exemplifications.

3.2.4 Metaphorizing
The fourth category of adaptive transfer or 'metaphorizing' was used to benefit from one particular learning element learned before in a way that would clarify the relationships and meanings of different items. The participants showed the following processes of achieving this category.

3.2.4.1 Drawing analogy
Through this process, the participants tried to extract meaning from some vocabulary items by associating the parts and roots to those words already

studied. Sometimes the process was an inferential one which helped decide on the proper use of a syntactic structure. The following participant talks about how he arrived at the meaning of 'asynchrony' to use it in the writing:

Participant (No. 5, Major: Electrical Engineering). About this particular word (asynchrony), I conceived it in my mind as a word which could be associated with others; so it was found related to the prefix 'a' in other words, e.g., asocial. I compared ' the two prefixes' and got the idea that it meant 'lack of synchrony'.

3.2.4.2 Symbolizing

In this process, one of the participants actually moved from a concrete concept to some other interpretation of abstract nature. As exemplified below, the participant takes advantage of passive and active voice constructions to infer that the writers tend to be standing outside the text with preference given to impersonality. In fact, the structure of language represents the idea of objectivity of expression. Here is an example:

The sentence and the participant's response:

<Many therapeutic techniques have been established to help the patients with ……..>

Participant (No. 8, Major: Psychology). I used this passive voice to signify the truthfulness and objectivity of my saying.

3.2.5 Using resources

The fifth category of adaptive transfer, namely, 'using resources', was achieved through the following processes.

3.2.5.1 Trial and error

For two of the transfers which were identified as indirect, the participants believed that they often went through a heuristic or trial and error process to get to the best results. Below comes an example:

Participant (No. 12, Major: English Language). The notes and quotes I had gathered from different sources sometimes had their own story. For example, I first inserted this particular sentence (Sentence: Chomsky (1977) talked about human computational system first ….) into the second paragraph of my own writing but upon redrafting I found that it would be better to put it elsewhere (thus taken to the first paragraph). This was taken back to the former place as I thought it would make a better link.

3.2.5.2 Algorithmic analysis

Through this process, one of the participants reported contriving certain procedures in his mind which could lead him to the end most efficiently. The following shows how he solved such a problem. In response to the question of how he collected the data for the project, the participant studying chemical engineering said:

Participant (No. 1 Major: Chemical Engineering). I did not do the job randomly to get the result but I first reflected over the plan and prepared a better and better, well justified roadmap and then used it as I progressed toward the end.

Table 2 displays a summary of the types and processes of adaptive transfer as revealed in the students' writing samples.

Table 2. Types and processes of adaptive transfer

Types of Adaptive Transfer (Frequency)	Processes for Types of Transfer (Frequency)	
1.Organizing (12)	1. Seeking varied facets	(3)
	2. Avoiding scrambled order	(3)
	3. Modeling	(2)
	4. Backtracking	(2)
	5. Linear sequencing	(2)
2. Grammatical Refining (8)	1. Extending accuracy to verbs	(3)
	2. Linking texts	(2)
	3. Choosing proper voc.	(2)
	4. Comparing L1 and L2	(1)
3. Rephrasing (6)	1. Rewriting	(3)
	2. Personalizing	(2)
	3. Reifying ideas	(1)
4. Metaphorizing (3)	1. Drawing analogy	(2)
	2. Symbolizing	(1)
5. Resource Using (3)	1. Trial and error	(2)
	2. Algorithmic analysis	(1)

As can be seen, adaptive transfer categories are mostly applied for the organization of the writings. This can be explained by the fact that 'organizing' is a more general, generalizable and abstract concept in comparison with concrete nature of, say, 'using resources'. At the same time, this category assumes a primary stance for any writer who wishes to find himself regulated by the regulations and overall configuration issues.

The following table (3) shows the dispersion of occurrences across the fields of study. Though marginally different, the rankings begin with the English Language on the top, followed by Psychology, Chemical Engineering, and finally Electrical Engineering. We may very cautiously claim that because the course was taught in the English Language and the whole textbook also revolved around the writing in the English language, our participants writing for that particular purpose, rather than other content courses, capitalized on the resemblances and functioned differently.

Table 3. Distribution of adaptive transfer across disciplines

Disciplines	N	Total Writing Samples	Adaptive Transfer	Mean Adaptive Transfer	Mean adaptive Transfer per 1000 words	Rank
1. Ch. Eng.	3	10	6	0.60	0.27	3
2. El. Eng.	4	11	4	0.36	0.23	4
3. Psych.	3	14	9	0.64	0.33	2
4. Eng. Lg.	3	21	13	0.61	0.4	1
Total	13	56	32	0.57	0.32	

Note: Eng=Engineering; Ch.=chemical; El=Electrical; Psych=Psychology; Eng=English; Lg=Language

The obtained results of this study generally pointed to the learners' reflective capacity enhanced through EGAP class. The class appeared to have helped learners in perceiving pertinent aspects of the tasks that they were going to undertake. The analysis of data and interview transcripts showed that the learners would try to make their choices of writing elements strategically and based on the learning situations that they had already experienced. Actually, the learners from EGAP class tended to monitor and regulate their writing performance to the standards of writing both by directly borrowing and indirectly reformulating the learning elements of the past, and also both in EGAP contexts as well as non EGAP settings (their own content courses). The transcriptions demonstrated that they were actively attentive to the effective evaluation and reevaluation of their composing conditions and regularly analyzed or combined their acquired knowledge of disciplinary composing processes to serve their own novel purposes. An important point to stress is that the learners all relied on their past learning to tackle the new problems though they had sometimes forgotten the exact source and origin. In other words, the new writing situations with which learners were concerned in one way or another were closely linked with their past acquired knowledge.

4. Discussion and Conclusion
This study was a response to the call for an investigation into the adaptive transfer whereby learning in one particular context affects learners' performances in another context (Perkins & Salomon, 1994). Being the first of its kind, this probe into the type and process of adaptive transfer contributes to the literature on transfer in EGAP and moves the concept of transfer beyond the traditional researcher defined objectives of transfer which blocks accounting for trajectories of learning transferable form one context into another and from EGAP to non EGAP contexts (Bradford & Schwartz, 1999; Royer, Mestre & Dufresne, 2005). This re-

conceptualization of transfer expands the notion into the mental processes or how we learn new tasks (Beech, 1999).

The results in this study suggest that the writers are not preprogrammed machines to produce only certain type of texts. Rather, they are capable of shaping knowledge, transforming their learning, and reorienting their skills to serve their own goals. And they are not 'delivery people' who transport their skills from one context to another similar one (DePalma & Ringer, 2011). Given the connections that the students in the present study have made between EGAP and their own content areas, it stands to reason that the students also perceive their writing course as an authentic auxiliary tool when writing for other disciplinary contexts. This finding is in stark contrast with Hansen's (2000) conclusion in which an EAP course was considered unhelpful in a math context.

This interpretation shows that EGAP writers not only exercise their ability to reuse their previous learning, but also develop their own agency to handle distinct composing tasks not directly prescribed by their previous backgrounds. The results also illuminate that while transfer occurs where the initial and target contexts are stable and similar, it cannot be rejected that learners also reformulate their past learning based on the perception of task similarity and difference in categorically different settings. This finding confirms the position taken by Leki and Carsen (1997) that the general goal of EAP is to prepare students to write for academic purposes rather than just for EAP classes. An immediate implication of this finding is that such courses need not limit themselves to the dichotomy of general versus specific as it seems learners generally break away from the borders of specificity imposed under EAP courses. The findings of the study further show that adaptive transfer, despite transcending the limits of specificity, is still dominant in the contexts where maximum similarity exists between the instructional and target contexts (e.g., our students used adaptive transfer in the English Language Context most). This bears some opposite relation with the claim that adaptive transfer is a process of reshaping learned writing knowledge in the unfamiliar contexts alone (DePalma & Ringer, 2011).

Findings also help redefine the position of broad based versus localized transfer as discussed by Smit (2004). Smit (2004) differentiates between broad transfers as those occurring from one context to another and localized transfers as specific to certain contexts which cannot occur in general contexts. However, this study shows that the learning elements can variably move up and down their general-specific scale. That is, some general points are carried over to new contexts while being narrowed down (made specific) and also some specific learning elements are transferred to new contexts through generalization to serve the novel ends in writing. For example, as reviewed above, students generalized the issue of 'using temporal transitions'

as a specific point to the general notion of 'linking texts properly' or general element of 'organization' was narrowed down and made into specific element of 'paragraphing'. This indicates that learning is a very dynamic process, through which learners can assess and adapt to the demands of particular contexts regardless of whether they are originally broad based or localized. In other words, the writers develop themselves into purposeful strategic composers (Carroll, 2002) as their meta-awareness about language, composing and rhetorical capacities grows further regardless of whether they are functioning in a similar EGAP or content courses of their own majors. This development in transfer emphasizes that the concept has to be revisited from the narrow and consistent application of the past knowledge into a flexible, situation based and continuous capability of the writers. Beech (1999) argues that a narrow concept of transfer cannot capture the continuity and transformation that we experience to learn new tasks and problems. Thus he defines transfer "as consequential transition among social activities" (p.104) through which learners and social institutes establish mutual constitutive relationships over time. To him, knowledge, skill, and identity are continuously formed and transformed over time as individuals experience new social conditions.

As a prevailing concept in education in general and L2 writing in particular, transfer notion has to transcend the limits of application and replication of knowledge and also involve the processes used to form relations of similarities and generalizations across different contexts (Broudy, 1977; Lobato, 2003).

As a final point, this study did not consider language proficiency as a moderator variable because the project was done through availability sampling rather than the opportunity to conduct a screening test. Therefore, the results have to be interpreted cautiously.

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