Developing a Model for Disciplinary Writing Expertise in Postgraduate Teaching English as a Foreign Language Programs

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Abstract

A challenge for many postgraduate students is to move from the state of novice observers to those of professional contributors of a particular discourse community. They need to develop certain skills, practices, and competences, the demonstration of which is mostly through writing, called disciplinary writing expertise (DWE). DWE can be examined from two aspects of nature and development. This study aims at proposing a model of disciplinary writing expertise including both the competencies of DWE and factors developing these components. In-depth interviews with 28 postgraduate students of Teaching English as a Foreign Language (TEFL) were collected and research papers written by these students were used to collect data. Based on substantive considerations and the results of the content analysis, five subcomponents of DWE were identified including strategic, genre, rhetorical, subject matter and discourse community knowledge components. Meanwhile, writing strategies and goal orientations were identified as two important factors influencing the development of disciplinary writing proficiency in a foreign language context. Two questionnaires were made and piloted to endorse these two factors among 538 postgraduate TEFL students. Using structural equation modeling (SEM), we proposed a model to show the relationship among these two factors and the components of DWE. The results showed that those who followed mastery goals used all types of writing strategies to develop different subcomponents of DWE. On the other hand, those who followed context and career-directed goals used strategies to develop rhetorical knowledge mostly.

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1. Introduction

One of the most important challenges that post-graduate students in a foreign language university context encounter is developing the necessary discipline-specific practices and skills or what some scholars (e.g. Christie & Maton, 2011; Prior, 1998) have called "disciplinarity". This discipline-specific knowledge involves skills, dispositions, language, and relationships students rarely experience outside their particular discourse communities (Lewis, 2007; Lea and Street, 1998). The demonstration of this knowledge in a field is mostly through writing. Advanced academic writings in different disciplines are illustrations of a particular kind of academic knowledge which is referred to as disciplinary writing expertise (DWE hereafter) (Beaufort, 2004).

Academic literacy has an important role in constructing knowledge in university contexts. However, as Curnow and Liddicoat (2010, p. 1) state, this is an ignored area "in teaching and assessment approaches, in favor of a narrower focus on content". In other words, when talking about academic literacy, more attention is generally paid to the content being taught rather than the academic literacy skills and competencies students need to acquire in order to join the specific community of discourse they belong to. Gaining such a status is a difficult task even in one's native language. Therefore, when it comes to a foreign language, complexities emerge as language proficiency is another area of difficulty which may create a difference between native and non-native writers. Though research has shown that domestic (native) students have no particular priority over international (non-native) students regarding academic literacy skills (Erling & Richardson, 2010; Paton, 2007), this does not mean that English as a Foreign Language (EFL) non-native students do not have their own problems in developing such a competence.

Many scholars have emphasized the crucial need to develop models for different aspects of disciplinary writing (Young & Leinhardt, 1998). As Beaufort (2004) states, "there has been little documentation of successful disciplinary writing curricula that are systematic in their approach" (p. 136). One reason for this paucity may be related to lack of enough conceptualization of what professional and academic literacy actually is and how it develops. If such conceptualizations and models had been presented, they could "have been a sound platform for instigating curricular reform in writing instruction across disciplines" (Beaufort, 2004, p. 136). In other words, as Roozen (2010) maintains, as well as defining the components of what is called disciplinary writing expertise (the "what" aspect), it is also necessary to identify specific factors, strategies, or practices that lead to its development (the "how" aspect).

This study is a contribution to the development of disciplinary writing

models in the fields of higher education in general and the area of foreign language teaching in particular. For this purpose, the researchers tried to identify the components of this particular knowledge type and the influential factors that contribute to its development. In addition, the study aimed at building a model of disciplinary writing expertise encompassing all the identified factors and strategies influencing the development of discipline-specific writing expertise. As this study starts with a qualitative design, the influential strategies and factors and the final model including their relationships will be determined as a result of the emerging findings.

2. Literature Review

Research in the area of disciplinary writing expertise dates back to 1980s (Berkenkotter, Huckin, & Ackerman, 1988; Flower & Hayes, 1981). From this early literature up to the present time, many studies have attempted to examine different aspects of academic writing in the disciplines. A socio-cognitive view about writing expertise combines both general and local approaches (Riazi, 1997; Spack, 1997). This paradigm holds that while we need to know the basic elements of writing (as a cognitive or problem-solving activity in a mental framework), we also need to have specific writing expertise and skills when it comes to specific types of professional writings and genres within a particular social domain with its particular culture, norms, and goals. As Beaufort (2004, p. 138) states, "writing is not a one-size-fits-all sort of skill". Therefore achieving disciplinary literacy is not simply a matter of reading and writing at advanced levels. Rather, it includes different types of interaction, collaboration, and socialization practices. It involves gaining a new identity as the member and contributor of a particular social context, i.e. the discourse community of a particular discipline.

2.1. The Nature of Disciplinary Writing Expertise

Early literature on writing expertise (Carter, 1990; Flower & Hayes, 1981) specifies two main components of this particular knowledge: content or subject matter knowledge and strategic knowledge. Specifying content knowledge as part of writing expertise implies that writing, at advanced academic levels, is discipline- or domain-specific. The second main component of writing expertise is strategic knowledge which can be characterized as the "how" of academic writing or that part of disciplinary writing expertise which puts the domain knowledge into practice or makes it implementational or operationalized. In other words, strategic knowledge has an executive function.

It should be noted here that few attempts have been made to propose models related to the nature of disciplinary writing expertise. (Young & Leinhardt, 1998). One study which tried to compensate for this shortcoming

in the field of writing was the comprehensive model of disciplinary writing expertise proposed by Beaufort (1999, 2004). Using a case study research design, Beaufort (1999) developed a model of disciplinary writing expertise which consists of five basic knowledge domains: discourse-community knowledge, subject-matter knowledge, genre knowledge, rhetorical knowledge, and writing-process knowledge. The model builds on socio-cognitive and rhetorical perspectives of writing including notions of situated cognition and apprenticeship. In these views, it is argued that writing is a situated cognitive activity acquired in authentic contexts through apprentice-like situations and by communicating with peers and experts about those contexts and that knowledge is situated in the activities bound to social, cultural, and physical contexts.

2.2. Developing Disciplinary Writing Expertise

The next important issue regarding DWE is the way this knowledge develops or examining factors which are helpful in developing this particular type of writing knowledge. Based on substantive evidence on general L2 writing competence development and the socio-cognitive approach to literacy development, it can be concluded that writing strategies are important variables in the development of L2 writing proficiency in general and discipline-specific writing competence in particular. In what follows, we examine literature on the role of strategic knowledge in developing writing competence.

2.2.1 Writing Strategies

This section reviews those studies which are conducted within a socio-cognitive theoretical background and have in particular focused on writing strategies in the disciplines. Early studies were first cognitively-oriented and regarded writing as a problem-solving activity (Bereiter & Scardamalia, 1987; Flower & Hayes, 1981) but in mid-1990s the trend got a more socio-cognitive perspective (see Kent, 1999; Riazi, 1997) assuming that writing is a socially situated, cognitive, communicative activity. Previous literature highlights the effect of writing strategies on L2 writing development by distinguishing the strategies used by novice versus skilled writers (Bereiter & Scardamalia, 1987). Many studies have revealed that both the choice and application of different composition strategies influence the quality of the writing produced (He, 2005; Riazi, 1997; Spack, 1997).

Strategic competence is an important component of all knowledge models in the field of language acquisition. In these models, strategic knowledge is the mental ability that implements language knowledge or a type of executive, implementational or procedural knowledge which puts the other domains of a particular knowledge area into practice. This view about strategies as mental constructs or a domain of knowledge was also observed

in the proposed models of writing expertise (Flower & Hayes, 1981; Beaufort, 1999, 2004). Strategies can be defined as "deliberate actions or sets of procedures that learners select, implement and control to achieve desired goals and objectives in the completion of learning or performance tasks" (Manchón, 2001, p. 48). Manchón (2001) and Manchón, Roca de Larios, and Murphy (2007) proposed a *broad* and a *narrow* conceptualization of the L2 writing strategies. The broad characterization, which equates composing strategies with the ways L2 writers perform their writings, includes a learner-internal (any action or technique taken by writers) and a socio-cognitive trend of research (assuming that writing is a socially constructed practice). A narrow conceptualization, on the other hand, is research that has investigated writing strategies from a cognitive, intra-learner, and problem-solving view. It defines strategies in terms of either control mechanisms (cognitive models of L1 writing) or problem-solving devices. This conceptualization distinguishes writing strategies from other writing events (like macro-writing processes) and defines them as actions that the writer is involved in while writing. The present study, following a broad conceptualization of the term writing strategy, defines writing as a socio-cognitive process (Cumming, 1989; Cumming, Busch & Zhou, 2002; Cumming, Eouanzoui, Gentil & Yang, 2004; Riazi, 1997; Spack, 1997) which holds that L2 writing strategies are actions L2 writers perform in order to respond to the demands of the discourse community to which they belong. The socio-cognitive trend of writing strategies is based on the socio-cognitive theories of literacy development (Riazi, 1997; Spack, 1997) as well as the goal theories in educational psychology (Cumming, Busch & Zhou, 2002; Cumming et al., 2004). Literature supports that there seems to exist a close relationship between L2 writing strategies and goal orientations L2 writers hold for their writing practices (He, 2005). In other words, according to the socio-cognitive paradigm in the broad conceptualization of the writing strategies, L2 writing strategies are goal-directed processes writers utilize in their composition practices. Finding the nature of these two determinant variables as well as their interaction in promoting DWE in a foreign language is an important objective of the present study.

2.3. Contribution of the Present Study

Based on the literature reviewed, it can be stated that strategic competence or knowledge of writing strategies is on the one hand a component of disciplinary writing expertise models and on the other, one of the factors which influences the development of this particular writing proficiency. In other words, it seems that writing strategies play a mediating role in the sense that on the one hand, strategic competence is a knowledge component of DWE and on the other, based on the broad conceptualization of writing strategies, they are goal-directed processes which writers utilize in their

attempts to compose professional texts in their disciplines. These substantive considerations led the researchers in clarifying the relationships among variables of the study.

3. Method

This study follows a qualitative-quantitative design starting with a qualitative phase and moving towards a quantitative end. As such, the study is divided into three main phases: a qualitative phase (using interview and text analysis), an endorsement phase (using questionnaires) and a model building and testing phase (using Structural Equation Modeling).

The qualitative phase the researchers aimed to explore the nature of writing expertise in the TEFL discipline (in terms of its composing constituents), strategies that would lead to the development of this kind of writing knowledge, and any other emergent factor influencing the writing practices of postgraduate students while they were involved in producing their discipline-specific professional texts. For this purpose 28 postgraduate students of TEFL (20 M.A. students, 3 M.A. holders, and 5 Ph. D. candidates) were interviewed on their writing practices and compositions accomplished or being accomplished in their discipline. In addition, In order to confirm the results of the interviews, available samples of the students' written research papers (N=11) were also gathered as another source of data. This genre was selected as this is the commonest type of writing assignment among postgraduate students in this context. All of these papers were research term paper assignments written by these students as a partial requirement for the completion of their courses. A number of them (five) had been published in local and international journals.

The results of the qualitative phase of the study led the researchers to postulate a model on the relationship between goal orientations as the most determining factor identified based on the analysis of the interviews with the students. This postulated model is presented in Figure 1.
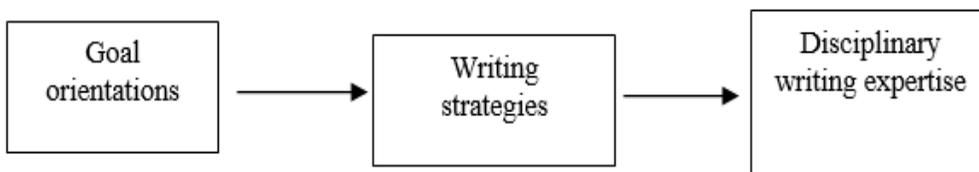
Figure 1. A postulated developmental model of disciplinary writing expertise depicting the relationship between the variables of the study

The first set of relationships between goals and strategies was established based on the existent considerations in previous literature. According to the broad conceptualization of writing strategies (Manchón, Roca de Larios, &

Murphy 2007), this line of research on L2 writing strategies is informed by goal theories in educational psychology (Cumming, Busch & Zhou, 2002; Cumming et al., 2004; He, 2005; Yang, Baba, Cumming, 2004). Based on this view, learning strategies including writing strategies are goal-directed, intentionally invoked, and effortful activities (Weinstein, Husman, & Dierking, 2000). Riazi (1997) also emphasizes how the strategic behavior of L2 postgraduate students was motivated by their goals. Similarly, Cumming, Busch & Zhou (2002, p. 193) maintain that "goals integrally relate to (and may perhaps even determine) the strategic operations that people undertake in performing specific tasks". They conclude that strategies must be "analyzed in reference to the goals people have to motivate and guide their task performance as well as other essential aspects of these activity structures and the contexts in which they are embedded" (p. 193). In short, it can be concluded that research on L2 learning strategies including writing strategies has moved to the new directions opened by research on educational goal theories (Dornyei, 2005; Dornyei & Ushioda, 2011). In other words, writing strategies are interrelated (or even may be determined) by the goals student-writers pursue in their writing performance. This study was an attempt to cast light on the relationships between goals postgraduate students held in composing their discipline-specific writings and the type of strategies utilized by them in this developmental process. This is a relationship which, as He (2005) maintains, is not clear and not researched enough in the field even though these two factors have been considered as critical in producing better writing outcomes. These substantive considerations were well motivating in determining the postulated relationships between goal orientations and writing strategies.

In this proposed model, strategies function as executive mediators in the process of developing disciplinary writing expertise domains. In other words, as disciplinary writing expertise is a particular type of writing proficiency, and as it is composed of particular knowledge domains by itself, it can be argued that certain strategies are helpful in developing these DWE knowledge domains in the same way that writing strategies are effective in developing general L2 proficiency. These particular strategies, by themselves, which is referred to as strategic knowledge, make the fifth knowledge domain of DWE. Therefore, identifying these strategies was one of the main objectives of the qualitative phase of this study. The other objective was to find out the nature of goal orientations as another important factor in developing DWE. As was mentioned earlier, these postulated relationships between writing strategies and goal orientations are rooted in substantive evidence from literature.

In order to see to what extent the results obtained in the qualitative phase were generalizable to a large sample of comparable students, the second phase of the study, i.e. an endorsement phase, was run. For this

purpose, two questionnaires were developed based on the results of the interviews and text analysis as well as related literature to measure goal orientations and writing strategies which purposefully help in the development of four identified domains of disciplinary writing expertise. After a pilot phase (with 105 postgraduate students), the questionnaires were endorsed with a large sample (685 postgraduate students in different universities). The results of the endorsement phase were analyzed in the last phase of the study in the form of a developmental model using structural equation modeling.

4. Results and Discussion

The first part of this section presents the qualitative results obtained from the analysis of interview transcripts and research papers. The second section is devoted to results obtained from structural equation modeling procedures including measurement and final latent models.

4.1. Findings of the Qualitative Phase

The results in this phase of the study showed us that the postgraduate participants, to some extent, showed indications of the knowledge domains of disciplinary writing expertise. These domains were writing process or strategic knowledge, knowledge of the genres common in a particular discipline, knowledge of the particular discourse community to which these students were going to join, rhetorical knowledge, and knowledge of the subject matter. In addition, the participants used different strategies in order to compose discipline-specific writings in their field. These strategies were mostly modeling, socio-affective, communication, and resourcing strategies. Cognitive and metacognitive strategies were observed to a less degree. Based on this general categorization of strategies, a set of particular strategies were developed which were believed (based on literature and the analysis of interviews and research papers) to be possibly helpful in developing different domains of knowledge of disciplinary writing expertise. Finally, goal orientations were identified as the most influential factor (based on the theoretical conceptualization used for writing strategies and the results of the interviews) affecting the writing performance of the participants of this study. Further, four scales were identified for these goal orientations named as mastery, context-directed, career-directed, and work avoidance.

The information gathered from these qualitative analyses was used in the quantitative part of the study (to develop two strategy and goal orientation questionnaire). For this purpose, we drew on literature as well as the comments of participants in the interviews and the analysis of the research papers written by them. The next section reports results obtained from the quantitative procedures.

4.2. Findings of the Quantitative Phase

To capture the relationship between the measured variables or indicators (items) and the hypothesized latent variables of this study, eight measurement models were proposed. These measurement models were fitted to the gathered data in order to develop the final structural model of the study. Overall, these respecified models were used to propose a full structural regression model. In doing so, it was decided to follow an exploratory mode, i.e. to let the LISREL check for all possible relationships between the latent independent (exogenous) and latent dependant (endogenous) variables of the study.

The first conceptual model included both measurement (observed) and the structural path (latent) models. The path model illustrates the relationship between the latent variables which is the concern of this study which was performed, as mentioned earlier, through an exploratory procedure to examine all the possible relationships. These paths, showing the direct positive relationships, are postulated based on our best knowledge in literature about the relationship between goals and writing strategy use (He, 2005; Riazi, 1997). However, no study has thoroughly examined these goals and strategies, especially in the context of advanced professional writing in disciplines. This is the gap which this study intended to fill.

This initial model then went through an analysis against data to check its fitness. All insignificant relationships were removed from the model. A closer analysis of the t values showed that all of the remaining values in the model are outside the ±2 (or far from zero) which indicates a significant relationship at .05 level of significance (Kline, 2011).

In the analysis to reach to the final model, the substantive considerations accrued from literature were of great importance. Interestingly, the model, more or less, identified those paths as significant which have a supportive theoretical background. It was observed that mastery goal orientation was the only one goal category influencing the use of all disciplinary writing development strategies. On the other hand, work avoidance goal orientation had no significant relationship with any of the four strategy categories. The other two goal orientations, i.e. career- and context-directed goal categories had just a partial effect on developing disciplinary writing expertise. As Figure 3 demonstrates, these two goal categories had a significant relationship only with rhetorical knowledge strategies. This can be related to the nature of these two categories of goals which are totally extrinsic and instrumental and the nature of the writing strategies of this knowledge domain. Some of these items are related to the students' taking part in conferences or writing with the goal of publishing their paper in journals which shows an overlap or covariance between this strategy category and the two performance-related goal orientations of career

and context.

In addition, the model also proposed two paths between discourse community and genre strategies and discourse community and subject matter knowledge. Referring to the disciplinary writing expertise model provided by Beaufort (1999, 2004), the basic domain of writing expertise underlying all the other categories is knowledge of the discourse community. It seems that the proposed model in this study has demonstrated this basic role of the discourse community knowledge. Based on Beaufort's model, the interplays between these knowledge categories are also seen in the interrelationship observed between some strategy categories utilized to develop them.

Table 1 reports the Goodness-of-Fit indexes observed for the final fitted model.

Table 1

*Goodness-of-Fit Indexes for the Fitted Models of Work Avoidance Goal Orientation*

Developed Model	Value
Chi-Square	6957
Degrees of Freedom	975
(P-Value)	0.00
Root Mean Square Residual	0.10
Goodness of Fit Index (GFI)	0.68
Comparative Fit Index (CFI)	0.76
Incremental Fit Index (IFI)	0.77

The RMSEA goodness-of-fit index obtained for this model was 0.1 which according to literature (e.g. Hu & Bentler, 1999; Marsh, Hau, & Wen, 2004) shows a marginal value. In this study, we had a large sample size (>200) which according to literature reduces fit indexes (as it decreases the variance). The number of factors are also influential in decreasing the fit values of a developed model (Anderson & Gerbing, 1991 as cited in Lacobucci, 2010). Marsh, Hau, and Wen (2004) also warn against the use of the GOF indexes without considering the sample size and the number of indicators to avoid a type one error (incorrect rejection of an acceptable model). The reason is that large sample sizes create low variance and when the variance is low, it is impossible to detect great changes in the data. On the other hand, because of the large number of variables (as well as indicators per variable) and their relationships, it was not practical or plausible to free all the error terms between the indicators or latent variables in this model. Moreover, it is not possible to find theoretical explanations for all the error-freeing procedures among the variables (latent and observed). Accordingly, it can be stated here that the marginal indexes obtained for our initial model can be due to the large sample size (Lacobucci, 2010), the large number of factors in the model, and the number of variables per factor. Therefore, it was decided to accept the present model as it is based on the best knowledge of

literature about the effect of different goal categories on L2 performance.

The standardized loadings for the relationships between variables of the study are presented in Figure 4. These values represent the strength of the correlation between variables. According to literature (Kline, 2011), the size of these standardized path coefficients can be evaluated in the following way: coefficients less than 0.1 show a small effect, those ranging 0.1-0.30 show a moderate effect, and coefficients equal or larger than 0.5 indicate a large effect. Based on the standardized values observed in the final model, it can be stated that mastery goal orientation exerts a large effect on rhetorical and discourse community strategies but a moderate or typical effect on genre and subject matter strategies. Context-directed and career-directed goal orientations also show a moderate effect on rhetorical strategies.

Based on the results obtained from the qualitative phase of the study, the structural equation modeling procedures, and the substantive considerations in literature, the final developmental model of disciplinary writing expertise established throughout this study can be proposed as is demonstrated in Figure 2.
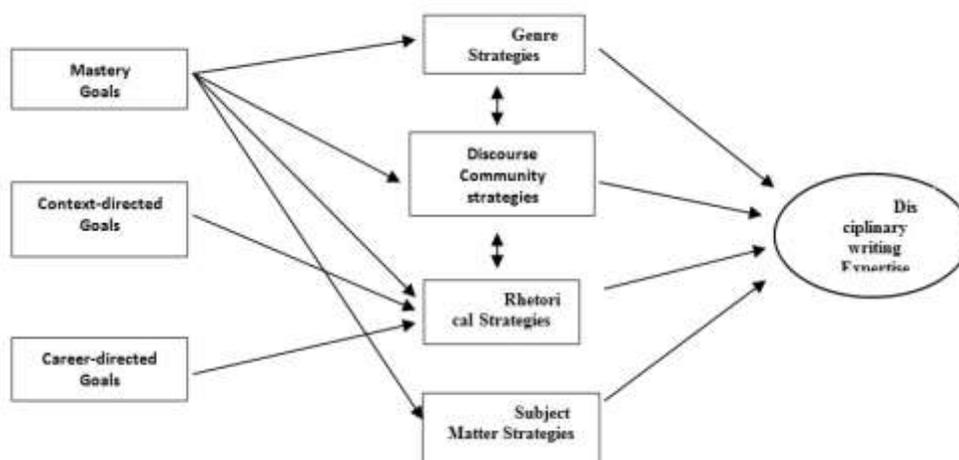
Figure 2. The proposed model of factors influencing the development of disciplinary writing expertise

The results of the structural equation modeling provided a detailed explanation of the relationship between writing strategies and goal orientations. Based on these results, students who pursue mastery goals or are intrinsically motivated to learn use all categories of strategies and, as a result, are more likely to develop disciplinary writing expertise in its totality, i.e. regarding all its constituting components. These results are in line with the large body of research on intrinsic motivation and its effects on language learning in general (Dornyei & Ushioda, 2011). On the other hand, career- and context-directed goal orientations had just a significant relationship with

rhetorical strategies. This suggests that extrinsically motivated students are less likely to develop disciplinary writing expertise and, as a result, only gain partial competence in this regard. Finally, work avoidance goal orientation had no significant relationship with any of the strategy categories and so it was removed from the final model. To put it differently, those who pursue this type of goal orientation may not, most probably, become expert writers in their field.

4.3. Discussion

The main objective of this study was to examine factors which are influential in developing DWE. Disciplinary writing expertise is a particular type of writing knowledge which consists of other domains of knowledge. Accordingly, all actions which lead to the development of this particular kind of writing can be regarded as writing strategies and as a result, are part of the strategic knowledge (Flower & Hayes, 1981) or writing process knowledge (Beaufort, 2004) or in simpler terms, the "how" of academic writing. Therefore, we can propose that these strategies are important in developing the other domains of writing expertise as demonstrated in the model (Figure 2).

The first domain of knowledge in DWE is knowledge of writing strategies or strategic knowledge. These strategies work as mediators between goal orientations and knowledge domains. On the one hand, strategic knowledge is a component of the writing expertise model which makes the acquisition, development, and implementation of the other domains possible, and on the other, being defined as goal-directed activities (in the broad conceptualization of writing strategy research), they seem to be determined by goals students pursue in their academic writings. According to the broad conceptualization of the L2 writing strategies, these strategies are defined as any type of activity "employed by L2 writers to respond to the demands encountered in the discourse community where they write and learn to write" (Manchón, Roca de Larios, & Murphy, 2007, p. 284). In other words, based on this broad conceptualization, any activity (cognitive, affective, and social) which leads to the acquisition, development, and enhancement of the overall writing outcomes can be regarded as an L2 writing strategy.

The second common domain of disciplinary writing expertise was genre knowledge. This frequency can be related to two factors: one is the basic role of this knowledge area in writing academic texts and the second can be related to the nature of this knowledge domain (including some linguistic features). In other words, students are, at least, familiar with these formatting rules because of their exposure to the published texts written by professional writers in their courses and pick these formal features inductively through modelling strategies or maybe due to their general

language proficiency. However, in addition to linguistic features, genre knowledge includes knowledge of the purpose (function of the texts, rhetorical appropriateness) (Berkenkotter & Huckin,1993; Slevin, 1988).

Regarding structural and functional aspects of genre knowledge, the results of this study showed that participants in this study were strong in terms of the linguistic features but they had some problems regarding the discourse and organization of the written papers in the sense that they did not demonstrate enough knowledge of the research paper genre mainly regarding the statement of the problem, objectives, or significance of the study. Most of the students wrote for the fulfillment of their courses rather than having a contribution to their field. Overall, this knowledge domain was to some extent present in academic papers written by these students especially regarding the linguistic aspects of genre knowledge.

The third domain identified in this study was discourse community knowledge. Knowledge of such a community refers to the goals and norms of the community to which these postgraduate students belong. This community may range from the classroom context or the department or faculty where students study to the larger national and international communities. This study showed that the knowledge of discourse community for this group of participants was very limited and constrained to the department where they were studying. Few had the concern of tackling issues impressing the larger community worldwide. Norms and goals were those identified by their department and not those set by the larger community. This was in line with previous research which identified classroom (versus the larger community) as the most important discourse community influencing the writing performances of postgraduate students (Bazerman, 1997; Beaufort, 2004; Young & Leinhardt, 1998). This particular context, the department, has its own norms and goals. Observing these norms and goals was considered by many participants as the most important or even the only criterion in their writing performances. In short, it must be concluded that knowledge of discourse community was constrained to the immediate context where they studied and did not include norms, goals, and culture of the broader, worldwide community.

Training rhetors in disciplines is one of the main objectives of all graduate courses worldwide though many will not reach this state (Beaufort, 2004). Rhetorical knowledge in writing expertise refers to the purpose, context, and audience of the written text in an academic context. The results of this study showed that these postgraduate students were mostly concerned about course or program fulfillment. As a result, the context which had the greatest effects on their writing performances was the immediate classroom context or the department rather than the broader national and international context. Their purpose was to fulfill the requirements of their graduate program and courses rather than to challenge themselves with what

impressed the prominent members of the field, and the audience to whom they wrote were mostly their instructors and members of their thesis committees rather than international readers or critics. These results are in line with the previous research which consider course requirements as the most important rhetorical purpose students write for (e.g. Beaufort, 2004). Finally, regarding the role of the writer, when there was a concern about the publication of the manuscript in journals, there seemed to exist a feeling of responsibility for what had been written. However, in other cases, no such a responsibility was expressed by the writers. In short, it can be stated that the rhetorical knowledge of these students (using the four criteria of context, purpose, audience, and writers' roles) were constrained to the immediate context where they studied, their professors as the audience for whom they wrote, and the fulfillment of their course requirements. Finally, the roles of the writers as being responsible for their writings were limited to cases where the manuscripts were supposed to be published in journals.

The final knowledge domain of DWE is subject matter knowledge. This knowledge domain includes knowledge of the topic as well as critical thinking and critical thinking and discussion skills (Beaufort, 1999). Results of this analysis revealed that critical reviews of previous literature were rarely observed in the written paper assignments. Knowledge of the subject matter was confined to the topics presented in the courses. Some of these students asserted that they did not study related literature on a topic but rather a recently published article which summarized the latest views on a topic in the field. The comparison of the literature and discussion parts written by the students showed that an imbalance existed between these two parts in favor of the literature reviews indicating that the students had little problems writing backgrounds of their studies (at least in a chronological report form), while they were not good enough to discuss and elaborate on the results obtained from their own research as they had no reliable source to use as the basis of their discussions.

As for the literature reviews, nearly all of them were written in a chronological format just reporting research performed by previous writers rather than putting their work in the perspective of the previous research or creating a critical framework to show the gap which had led them to the problem that they dealt with in their papers. In short, based on the definitions of this domain of knowledge, as including critical and discussion skills, or the "how or procedural aspect" of this knowledge as well as the subject matters in that field, i.e. the "what or declarative part" of the this knowledge domain" (Beaufort, 2004, p.156), it was observed that, for this group of students, this area of knowledge was underdeveloped. Students did not provide us with good examples of critical and discussing skills in their papers.

Goal orientations emerged as the most important factor influencing the writing practices of L2 postgraduate students. This finding can also be

supported by literature following a socio-cognitive perspective towards literacy development (e.g. Cumming, 2006; Cumming, Busch & Zhou, 2002; He, 2005; Nelson & Hayes, 1988; Riazi, 1997; Yang, Baba, Cumming, 2004). According to Manchón, Roca de Larios, and Murphy (2007), the socio-cognitive view within the broad conceptualization of L2 writing strategies includes goal theories of educational psychology. This view considers L2 writing as a goal-directed activity and writing strategies can be defined as "deliberate actions or sets of procedures that learners select, implement and control to achieve desired goals and objectives in the completion of learning or performance tasks" (Manchón, 2001, p. 48).

The results of this study revealed four categories of goals among these postgraduate students which were mastery, context-directed, career-directed, and work avoidance goal orientations. Context- and career-directed goal orientations were the most frequent goal categories among these students. Previously referred as performance goal orientations by some researchers (Was, 2006), these goal categories are extrinsic and instrumental in nature. As observed in the frequency and nature of different components of disciplinary writing expertise (Research question one), the rhetorical purposes of many of these students were limited to the fulfillment of the requirements of their courses and graduate programs and their knowledge of the discourse community was confined to the classroom and the department where they studied. Therefore, it is not strange that the extrinsic goal orientations were more frequent than the intrinsic mastery goal orientation. This study contributed to the previous literature by presenting a categorization of goal orientations for a particular task (discipline-specific writing) and in a particular context, i.e. writing in a discipline by EFL postgraduate students. Previous literature has examined goal orientations in language learning from a general point of view (Mattern, 2005; Was, 2006). Those studies which have paid attention to the issue of L2 writing (Bereiter & Scardamalia, 1987; Cumming, 2006; Cumming, Busch & Zhou, 2002; He, 2005; Nelson & Hayes, 1988; Riazi, 1997) did not provide classification of the goals students pursue in their academic writings. Though this categorization was related to L2 professional writing in the disciplines, it can be used as a model in other areas of L2 acquisition.

In spite of the fact that strategic knowledge is one of the components of disciplinary writing expertise by itself, these strategies can be regarded as mediating factors in the proposed model in this study. These particular goal-directed strategies are helpful in developing certain components of writing expertise in the disciplines. As a result, these strategies can be regarded as a mediating factor which, on the one hand, are goal-directed and on the other, influence the overall writing expertise in a discipline.

5. Conclusion and Implications

Based on the final model presented and analyzed through structural equation modeling and factor analyses, it can be stated that there seems to exist a relationship between the goal orientations of the postgraduate students and the strategies they use in order to develop different subcomponents of writing expertise in their discipline. Contrary to what may be thought, the relationships established through SEM do not necessarily indicate a causal relationship (Kline, 2011; Lacobucci, 2009). However, SEM procedures are able in casting light on the possible relationships between latent variables in a study with a higher degree of confidence than other statistical procedures do. In this study, two factors were examined as contributing to the development of disciplinary writing expertise. These two factors were writing strategies and goal orientations.

According to the results obtained through SEM procedures, there seems to be a meaningful relationship between writing strategies and goal orientations. Students holding mastery goals, or those who are intrinsically motivated to learn for its own sake, use all categories of strategies and, as a result, are more probable to become expert writers in their discipline. On the other hand, career- and context-directed goal orientations had just a significant relationship with rhetorical strategies which may be related to the particular nature of this domain of knowledge (consisting of knowledge of the rhetorical situation in which you write) or the strategies which might be helpful in its development. For instance, some of these strategies were related to activities considering norms or goals of the context or situation where they studied or activities which were closely related to the future career of these students (like taking part in conferences). Overall, it can be concluded that students who hold context- and career-directed goal orientations or are, in other words, extrinsically motivated, are less probable to develop disciplinary writing expertise in its totality and as a result, only may gain partial competence in this regard. Finally, work avoidance goal orientation had no significant relationship with any of the strategy categories and so it was removed from this final model. In other words, those who pursue this type of goal orientation will not, most probably, become expert writers in their field.

These results confirm previous research on L2 writing which emphasize the determining effect of goals on writing performance of L2 writers (e.g. Cumming, 2006; He, 2005; Nelson & Hayes, 1988; Riazi, 1997), though in none of these studies the issue of goals was considered as a factor which might lead to the development of disciplinary writing expertise. These results confirm previous research which define writing strategies as any type of goal-directed activity which is useful in producing better writing outcomes (Cumming, Busch & Zhou, 2002; Riazi, 1997; Yang, Baba, Cumming, 2004). These results also showed the way goals and strategies are related to

each other in the development of disciplinary writing expertise by postgraduate students who were in the way of developing such expertise and its constituting knowledge components. Strategies, which form a knowledge component in this model of expertise, can work as mediators between the other knowledge areas and goals. As these strategies are defined from a goal-directed paradigm, they seem to be determined by the goal orientations of the students. Overall, it can be stated that the developmental model of disciplinary writing expertise presented in this study is able to clarify two factors influencing the development of this particular type of writing and their interrelationship.

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