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Theoretical Frameworks For A Qualitative Study of Transfer

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ABSTRACT

As the scholarship of teaching and learning (SoTL) becomes an important aspect of educational practices in higher education settings, SoTL practitioners, especially those who are new to this type of research, may face the challenge of developing theoretically sound approaches which bring together research, theory and empirical data meaningfully to engage with a given educational problem. For many educators, this may involve learning new ways of enquiry, including exploring new types of data. Qualitative approaches, for example, may be challenging to implement without specific theoretical frameworks. Yet, SoTL researchers have access to an emic perspective in the research area and may usefully adopt a range of qualitative methods which value the student voice and assignments when evaluating the impact of their teaching. This paper aims to share the design of a qualitative transfer study which was conducted over two years at the National University of Singapore (NUS), and explored how students apply knowledge from an English for Academic Purposes (EAP)/academic literacy module to their various core disciplinary module assignments. The paper focusses on the methodology and analytical frameworks adopted to provide explanatory and usable insights into transfer processes and what may hinder it. In particular, the paper describes how theoretical positions on what transfer entails informed specific methodological decisions. The study enacted complementary analytical frameworks using Legitimation Code Theory (LCT), a sociological framework dedicated to exploring knowledge practices and Systemic Functional Linguistics (SFL), a linguistic theory which provides insights into language use in various contexts. The paper shows how these frameworks enabled access into students' dispositions and deep-seated orientation to knowledge which might impact transfer.

Keyword: SoTL, transfer, qualitative methods, Legitimation Code Theory, Specialization, Systemic Functional Linguistics.

INTRODUCTION

Scholarship of Teaching and Learning (SoTL) research is characterised by a wide range of approaches (Miller-Young & Yeo, 2015), which may take the SoTL researcher into ‘unfamiliar territories’ (Reichard & Takayama, 2012). Increasingly, SoTL research is also characterised by interdisciplinarity, which McKinney and Huber (2012) attribute to a range of factors. First, a commonality in teaching and learning issues across disciplines makes interdisciplinary dialogue useful. For example, the issues related to transfer described in this paper concern educators in any discipline. McKinney and Huber (2012) also point to the need for SoTL practitioners to reach beyond methods of enquiry which their disciplines have trained them in. These unfamiliar territories present undeniable challenges. Those more inclined to investigate problems through the rich insight of qualitative data may flounder at the thought of statistical analyses. SoTL practitioners in the sciences may be unfamiliar with ways to analyse students’ texts or interview data. Yet, it is this interdisciplinarity which may lead to useful insights into our practices and student learning. As Reichard and Takayama (2012) argue, SoTL practice benefits from embracing the concept of ‘teaching commons’, a cross-disciplinary space where educators can exchange ideas with others working in different disciplines and in that process, question their assumptions on commonly shared teaching and learning issues, learn about methods of enquiry that differ, and perhaps expand the reach and impact of their SoTL endeavours. This cross-disciplinary approach may enable SoTL researchers to define their identities as “members of a larger community of teachers engaged in a common purpose” (Kreber, 2013. p. 6). This paper therefore aims to contribute to this teaching commons by discussing how educators may approach the way they research and measure the impact of their teaching from a qualitative perspective. This is done through the description of a qualitative transfer study design, from overall conceptualisation and methodological design to selection and deployment of qualitative analytical frameworks.

The paper first provides a brief background on the study and how it was motivated by the very concrete problem of transfer from an English for Academic Purposes (EAP) module to students’ own disciplinary contexts. Then, as epistemological, philosophical values and theoretical assumptions about broad concepts such as *learning*, *transfer*, or *knowledge* influence not only our educational practices, but also our research into these practices and our students’ learning, the paper proposes a theoretical unpacking of the term ‘transfer’ in order to show how the overall study design is aligned to this understanding. The paper then describes the qualitative study design and data types, explaining the complementary insights which can be gained by a combination of student texts and interviews in transfer studies. Lastly, aspects of two theoretical frameworks—Systemic Functional Linguistics

theory (Halliday & Matthiessen, 2014; Martin, 1992; Martin & White, 2005) and a sociology of knowledge framework, Legitimation Code Theory (Maton, 2014; Maton, 2016)—are briefly described and their application demonstrated. These two frameworks enable the researcher to explore both textual evidence and perception of transfer, and access deeper orientations to knowledge which, the author argues, are useful to address across disciplines in our search for impactful teaching.

STUDY BACKGROUND

The study was conducted over two years at the National University of Singapore (NUS) and concerned the impact of an EAP module offered each academic year by the Centre for English Language Communication (CELC) to over 1400 students from a range of faculties. The aim of the module is to prepare students for the academic literacy demands of their discipline. The groups are multi-disciplinary, which presents the challenge of providing a syllabus which is relevant to students' various disciplinary contexts (Hyland, 2002; Lillis & Tuck, 2016; Street & Lea, 1998). Research into academic discourse has shown that disciplines use different text types and genres (Nesi & Gardner, 2012), evaluate and condense information in various ways and for various purposes (Gardner, Nesi, & Biber, 2018), engage with external sources differently (Hyland, 2000), and generally conduct the business of writing in manners that reflect each discipline's unique epistemology and values (Street & Lea, 1998). With students ranging from across most faculties in NUS, designing a curriculum that maximises transfer is an undeniable challenge. Traditional approaches to an English for General Academic Purposes (EGAP) module tend to prioritise general academic literacy skills (Flowerdew & Peacock, 2001; Jordan, 1997) such as essay writing, participating in discussions, listening to lectures, as well as formal grammar accuracy. However, proponents of the specific approach, which targets disciplinary-specific literacy demands, argue that transfer from an EGAP module can only be limited (Hyland, 2002). A detailed description of the curriculum is beyond the scope of this methodology article. Broadly, the EGAP module under study is informed by a linguistic theory—Systemic Functional Linguistics (SFL)—which enables language to be taught according to the context and to be categorised into language metafunctions at whole text, paragraph and sentence levels. For example, students learn how language creates cohesion, expresses the subject knowledge and makes evaluative and stance meanings, and how the linguistic resources used to make these meanings vary depending on the context. These language resources are shown in the Table of Instantiation/Academic Language Toolkit (see Appendix 1; more information is available in Monbec, 2018; Monbec, 2019), and allow students to learn both the general elements of academic writing and explore disciplinary-specific meaning-making.

The SoTL study described here therefore set out to investigate whether and how students were applying the EAP module knowledge (shown partially here through the Academic Language Toolkit) into their various disciplinary contexts.

Beyond evaluating the impact, the study also aimed to understand the processes in transfer, the factors and the obstacles—understandings which could serve students at NUS as well as the wider community. As this paper focusses on the methodology, the next section analyses the concept of transfer in order to explain the methodological decisions which were made.

DEFINING & RESEARCHING TRANSFER

The proliferation of terms for transfer since the seminal work by educational psychologists Salomon and Perkins (1989), including cumulative learning (Maton, 2009), portable learning (Macken-Horarik, Sandiford, Love, & Unsworth, 2015), transference (Bergmann & Zepernick, 2007), and transcendence (Feuerstein, Feuerstein, Falik, & Rand, 2002) among others, indicates an area of contestation and points to different conceptualisations and understandings of what learning is. While the terms themselves matter little, these underlying meanings are important to unpack in the search for a research design that is most likely to yield useful findings. As we plan a study into transfer, several questions arise: When investigating transfer, what exactly are we looking for? What constitutes evidence? What type of data is useful? How may we analyse our data?

In recent years, emerging conceptualisations of transfer have rejected the notion implied in the metaphor ‘transfer’, that transfer is the transportation and application of a static set of knowledge items. Alternative perspectives have theorised transfer as a dynamic process (Beach, 2003; Hager & Hodkinson, 2009; Lave, 1988; Packer, 2001), and an interactional process (Jornet, Roth, & Krange, 2016). For other researchers, the metaphoric term ‘transfer’ itself should be abandoned (Tuomi-Grohn & Engestrom, 2003). For them, boundary crossing or ‘learning as becoming’ is a better description of what is entailed. In fact, the term ‘transfer’ is criticised for projecting a very narrow view of learning as a series of acquisition events of a set of isolated propositions or skills which are independent of the learner (Hager & Hodkinson, 2009). Lave (1996, p.151) writes, “Learning transfer is an extraordinarily narrow and barren account of how knowledgeable persons make their way among interrelated settings.” These scholars argue that traditional transfer theory ignores the context in which learning occurs and as such criticise the context-free, atomistic approaches common to many educational research endeavours. Lave and Wenger (1991) understand learning as occurring through participation

in human social practices. This impacts the way ‘transfer’ is conceptualised: rather than the transportation of a set of knowledge, the process, in their view, is of participation which leads to increasingly higher levels of performance and higher levels of acceptance in the community through the concept of ‘legitimate peripheral participation’. For them, the learners’ learning trajectory moves them from peripheral to expert participation and transfer occurs as they become increasingly apprenticed and acculturated into the community. In the participation metaphor, then, learning is seen as inextricably contextual and involves transforming prior learning to use in a new context. The transformation metaphor recognises transfer as a process whereby learners become ‘attuned to the affordances’ of the learning contexts (Greeno, Smith, & Moore, 1993) and distances itself from an objectivist view of knowledge.

Other issues that impact research design decisions concern factors that have been found to affect learning and transfer. The learner’s dispositions, for example, play a crucial role (Hager & Hodkinson, 2009). Sociologists Bourdieu and Wacquant (1992) define dispositions as a set of deep-seated orientations that guide people’s actions in any context. The Bourdieu concept of capital is also key to the process of transfer, according to Hager and Hodkinson (2009). Capital, in Bourdieu’s theory, refers to the various types of ‘assets’ a person possesses, which can be cultural (knowledge, education background, or linguistic), economic (financial situation), symbolic (assets that confer social standing and prestige), and social (network). This capital can impact the way a person adapts and thrives in a new context. As Maton (2009, p.55) notes, “the different orientations to meaning students bring with them to education constitute an essential element for a thorough understanding of cumulative learning.” In the EAP literature on transfer, dispositions are discussed as part of motivation, defined as a combination of effort, desire for and attitude towards learning which impact the degree to which a student will apply learning from one context to another (James, 2012).

Decisions about the best ways to investigate transfer therefore depend on how transfer is conceptualised. There are tensions between approaches that predetermine context-free items of knowledge to be measured and counted, and those that adopt a ‘student-centred’ perspective to simply find out from students what they transfer and how this is mediated (Lobato, 2006). Within the EAP/academic literacy field, for example, quantitative studies have measured impact by comparing a pre- and a post-test result on a writing task (Archibald, 2001). While this approach may have the merit to make a succinct statement about immediate impact, it does not address transfer in different contexts, nor can it explore processes or explanations for transfer or lack of. Qualitative approaches attempt to address this shortcoming and may involve surveying students’ perceptions of transfer (James, 2010). This provides an emic perspective but can also have drawbacks in that there is no evidence beyond the students’

perceptions. Very few studies incorporate both student perception and textual evidence (Cheng, 2007; Ong, 2014). Even fewer studies account for specific knowledge items, student perception of transfer, and textual evidence within specific disciplinary contexts (Shrestha, 2017). The next section describes a methodology design which addresses these gaps in the current approaches to transfer research in the English for Academic Literacy field.

FROM TRANSFER THEORISATION TO OVERALL STUDY DESIGN: A SOCIAL REALIST APPROACH

The discussion on transfer reviewed above highlights a dichotomy between an objective and a subjective view of knowledge. From a social realist stance, this is a false dichotomy (Maton, 2014; Maton & Moore, 2010). Social realism is an approach to educational research which aims to address “the false dichotomy between, on the one hand, the belief that knowledge must be decontextualized, value-free, detached and ‘objective’, and on the other hand, the idea that knowledge is socially constructed” (Maton & Moore, 2010, p. 1). Adopting a social realist approach means bridging this dichotomy by recognising knowledge as both ontologically real and as a social phenomenon. The impact this has on research methodology decisions is explained below.

The study described here adopts a social realist design. First, although the term ‘transfer’ was retained in order to fit within the EAP literature where the term has been prominent (Cheng, 2007; James, 2006, 2008, 2010, 2012; Shrestha, 2017), it is understood that the metaphor of transfer does not represent a literal reality, that it does not presume a view of learning as an acquisition of context-free propositions, and so it is not adopted in its narrow sense. Rather, transfer is understood as a process of transformation, of becoming part of a disciplinary community and adopting the discourse practices, a process which is supported by concrete disciplinary-specific discourse knowledge (see Appendix 1, Table of Instantiation/Academic Language Toolkit).

Firstly, the study adopted the position that transfer concerns both a concrete set of knowledge which has real impact on transfer, and that this knowledge is socially constructed and contextually specific (in this case, disciplines have their own ways to create, share and evaluate knowledge; disciplines vary in terms of discourse). It was therefore decided that the study would track transfer as a conscious ability to use concrete predetermined knowledge of language shown in the Table of Instantiation/Academic Language Toolkit from the EAP module into several disciplinary contexts (Maths, Life Science, Chemistry and Engineering). While the study tracked knowledge items from the module syllabus, these items were measured in a disciplinary assignment to show how

this knowledge supported the student's evolving academic language repertoire and its application in a specific disciplinary writing assignment.

Secondly, the study design was informed by a recognition that transfer is also a dynamic, transformative process (Beach, 2003) whereby learners develop their attitudes and dispositions, and ways to relate with a new community, as well as growing affiliation with their discipline over time. This led to the decision of interviewing students around their disciplinary assignments to gain participants' perspectives on transfer, the writing process of the assignment, and potential obstacles to transfer.

With these broad theoretical understandings in place, the study questions were devised.

Research questions

The study first aimed to answer a general question about the impact of this curriculum:

- In what ways does an EAP curriculum informed by SFL impact transfer from the English for General Academic Purposes (EGAP) module to disciplinary modules?

The study then aimed to obtain a more comprehensive understanding through the following sub-questions:

- In what ways can SFL and LCT as an overarching theoretical framework of knowledge inform teaching for transfer in the context of EAP modules?
- What evidence of transfer is there between an EAP module grounded in SFL and writing tasks in the disciplinary modules?
- What can explain any differences in transfer amongst participants?

This paper first describes the methodology for the overall study, then focusses on the frameworks adopted to answer the third research sub-question on differences in transfer among participants.

Methods

In order to address the research questions and the focus on both knowledge and learner, a mixed-qualitative method approach was adopted with a focus on ethnographic and discourse analysis as highlighted by Coffin and Donohue (2012). While ethnographic approaches can capture rich insights into the social context, the student's literacy practices and their perspectives on the practices which give rise to the text (Gardner, 2012; Lillis, 2008), textual analysis can

track linguistic evidence, creating a powerful explanatory combination and potentially addressing the shortage of such multi-perspective approaches in current EAP transfer literature.

Participants

All participants were selected from among the researcher/educator's own EAP students but were interviewed in a subsequent semester to evaluate the way the EAP knowledge was used after the module had ended. All participants were Year 1 and Year 2 students from the Faculty of Science. 18 students gave their consent, and 12 were retained as they provided full data sets (assignments and interview). Ethics clearance was sought and obtained from the university's Institutional Review Board (NUS-IRB Reference Code: A-16-167).

Data

Different types of data were collected and fulfilled a specific function towards giving a comprehensive understanding of transfer. These various perspectives on the issue also guided data triangulation which bolstered the validity of the design.

1. **Semi-guided interviews.** Students' semi-guided interviews aimed to understand students' perceptions of the transfer from EAP. Coffin and Donohue (2014) detail an ethnographic approach to investigating students' perceptions of their texts, which they call a 'mediated text analysis discussion'. Students were prompted to explain the purpose of each stage of their text, from overall purpose to meanings at sentence and paragraph level. In the present study, the interviews were conducted around the disciplinary text and recorded to allow for more detailed analysis. The semi-guided interview employed in this study starts with an open-ended question, namely, "How did you go about writing this text?" (after Coffin & Donohue, 2014) which allows for emic perspectives to emerge. However, the second part of the interview focused on the predetermined language elements taught in the EAP module to see whether this was relevant in the disciplinary context. Interviews lasted up to 35 minutes and were transcribed and entered into the MAXQDA coding software (similar to Nvivo).
2. **Discipline-specific assignments.** Students' disciplinary assignments provided linguistic evidence of transfer. Most participants discussed a lab report assignment in core modules in Life Science, Chemistry, Engineering and one discussed a proof exercise in Pure Math.

- 3. Lecturer's evaluation.** Additionally, a discipline lecturer's evaluation of the student's assignment was obtained through interview or email to understand the assignment requirements and students' assignment appropriateness.

Analytical frameworks

Before turning to the interview data, which is the focus of the second part of this paper, the analysis of the disciplinary assignments is briefly described. Following Coffin and Donohue (2014), SFL provided the framework to analyse *what* transfers. The assignments were analysed using the content of the Table of Instantiation/Academic Language Toolkit. The interviews were then conducted to understand how, from the student perspective, the EAP knowledge was engaged in writing the disciplinary assignment. The text analysis therefore helped ascertain whether students' perceptions of transfer was reflected in their texts. The next section details the analysis deployed on the interview data.

WORKING WITH INTERVIEW DATA: EXPLORING TRANSFER PROCESSES AND STUDENT DISPOSITIONS

This section of the paper narrows down to theoretical frameworks used to analyse the interview data.

A first stage coding involved thematic coding, which tracked mentions of the knowledge items taught in the EAP module that were reported as being applied in the disciplinary context and in particular, in the text discussed. It is important to note that the interview uses a 'talk around' text format (Lillis, 2008), and that when participants mention the use of a specific linguistic feature in their disciplinary text, they are concurrently showing the feature in their text and stating the function of the linguistic feature. For example, in Table 1 below, Kali explains why she needs to use hedging in the interpretation of her data. Thematic coding allowed for other categories to emerge such as explanations for transfer (or lack of) and characterisation of the EAP module, of the discipline, and a range of indications of affiliation and dispositions. The second stage coding involved theoretical frameworks to account for the participants' different dispositions and affiliation. An inter-rater reliability exercise was conducted to strengthen validity.

The coding system is shown in Table 1 with categories and example quotes from the data. Each stage is described in the paragraphs that follow.

Table 1

Coding system for interviews and examples from empirical data

Coding Categories		Example Quotes from Empirical Data
First-stage Coding:		
1. Transfer from the Table of Instantiation/Academic Writing Toolkit to the disciplinary text	<ul style="list-style-type: none"> — Cohesion — Subject Matter — Conjunction/ Logical Relations — Evaluation & Stance 	<i>'It's just these are the things I remember, when I was writing this, it seemed useful. Sometimes as I wrote, and thought 'How do I continue?' Then I remembered the thematic progression [cohesion toolkit].'</i> (Ben)
2. Taught in EAP but transferred from previous learning experience		<i>'mmm, it's more like generally [not learned during the EAP module], coz always writing essays as a child.'</i> (Yena)
3. Reasons for no transfer	<ul style="list-style-type: none"> — This context is very different from EAP; 'EAP knowledge structure was not understood so cannot be used. In the discipline context, this feature is not required. 	<p><i>'For the science, the lab report, it's like different and I can't find the link.'</i> (Julia)</p> <p><i>'Because it's tougher. Cannot just think about it.'</i> (Ben)</p> <p><i>'I don't really need citations, don't need to do hedging and stuff.'</i> (Jane)</p>
Second-stage Coding:		
4. Reasons for/types of transfer	<ul style="list-style-type: none"> — The context requires this meaning/resources. — Backward-reaching transfer (abstraction occurs in the new context). 	<p><i>'I cannot claim that [the sequence] codes a bacteria because it is just a data base search so this is why we use hedging.'</i> (Kali)</p> <p><i>'I think it's more like at the time when I need to do this homework. I realised I mean it's transferrable. So it's not like when I heard about it that I directly remember [planned to use it in Maths proofing].'</i> (Dr Strange)</p>
5. Description/characterization of EAP module with more or less focus on the content knowledge		<i>'In EAP I learned how to compare and contrast.'</i> (Paul)
6. Description/characterization of the Discipline with more or less focus on the content knowledge		<i>'It's very scientific.'</i> (Yena)
7. Mentions of affiliation to different groups through the use of personal pronouns		<i>'In Science we just don't write like that.'</i> (Igor)
8. Judgements expressed around the EAP module and the discipline		<i>'I considered it (EAP module) as a burden.'</i> (Dr Strange)

First-stage coding. The first stage of the coding analysis was simply to track the mentions of the content from the Table of Instantiation/Academic Language Toolkit (Item 1 in Table 1). Participants mentioned an item of knowledge which was useful and what function it served in their disciplinary text. They also confirmed this use by pointing to the feature in the text itself. Students also sometimes indicated they learned something before/they knew a specific item of the table from before (Item 2 in Table 1). Reasons mentioned by the participants for transfer (or lack of) included perception that the contexts were too different

(the EAP module writing task is an essay, and the disciplinary tasks were lab reports, or math proofs), prompting Julia to say she could not ‘find the link’. Other reasons were that the language features, or meanings were not required in the student’ discipline or that the knowledge claim had not been understood during the EAP module and therefore was not used.

Second-stage coding. The second stage of coding involved deploying LCT, in particular Specialization to explore deeper indications of students’ disposition towards the knowledge structures in the EAP module and in their own disciplines. Aspects of SFL, specifically tools from Appraisal were used to delve into issues of affiliation (Gee, 2010; Gee, 2000; Knight, 2010) and characterisation of the discipline and the EAP module. This second stage was devised because participants reported very different degrees of transfer on identical tasks and this warranted further exploration. For example, two participants discussing the same lab report reported very different occurrences of transfer, with one using most of the content of the Table and linking the linguistic features to the meaning required in the assignment, and the other reporting none. How can we explain the fact that students with otherwise very similar profiles (i.e. NUS undergraduates with similar linguistic, cultural and educational backgrounds, being interviewed on the same disciplinary assignment) provided drastically different responses in terms of transfer, during the interview? According to James (2012), this may be due to a matter of motivation. Yet, this explanation seems unsatisfactory and only raises further questions such as, “Why are students differently motivated when it comes to the EAP module?” In a homogeneous group of participants as was the case in this study, this difference warranted further investigation.

The LCT dimension of Specialization and the concept of Affiliation (Gee, 2000; Knight, 2010) were enacted to account for the differences in the way participants characterised their discipline, themselves and the EAP module. LCT and Affiliation were used because where students differed was on their description of these elements and on the description of their positioning in the undergraduate cohort, as more or less strongly affiliated to their disciplinary community and its ways of thinking and meaning.

The LCT analysis allowed for dispositions to be analysed in a theoretically principled manner. Briefly, Legitimation Code Theory (LCT) is a sociological toolkit, part of a broad social realist approach to educational practices and several other fields (Maton, 2014; Maton, Shay, & Hood, 2016)¹. There are five LCT dimensions: Specialization, Semantics, Autonomy, Temporality, and Density, which enable an analysis of the underlying organising principles of knowledge practices. The dimension enacted in this study, Specialization “can be introduced via the simple premise that practices and beliefs are about or oriented towards something and by someone” (Maton, 2014, p.29). Specialization

distinguishes between epistemic relations (ER), the relation between knowledge and its object/focus, and social relations (SR): the relation between knowledge and its authors or subjects (Maton & Chen, 2016a). Specialization therefore can be used to analyse ‘what’ or ‘who’ is viewed as ‘legitimate’ in various disciplines. From these relations, specialization codes of legitimation have been generated: some disciplines can be classified as ‘knowledge code’ (where the legitimacy comes from the knowledge itself), ‘knower code’ (where the attributes of the knower are more powerful in establishing legitimacy), ‘élite code’ (where legitimacy comes from both knowledge and knower’s attributes), and finally ‘relativist code’ (where legitimation comes from neither knower nor knowledge) (Van Krieken *et al.*, 2013). The specialization codes can be charted on a Cartesian plane, giving the four quadrants shown in Figure 1.

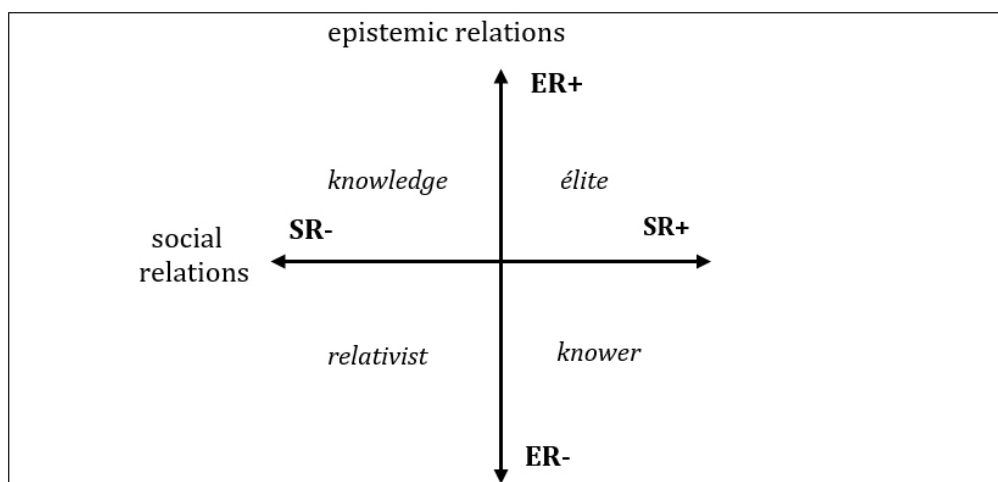


Figure 1. Specialization plane (Maton, 2014, p.30)

Specialization can be used to analyse disciplines, but also curriculum, lessons, or even segments of classroom interaction. It has also been deployed to explore students’ or teachers’ dispositions towards knowledge structures and educational practices (Van Krieken *et al.*, 2013; Maton, 2014; Maton & Chen, 2016b; Weekes, 2014). In this study, Specialization modalities were enacted as follows:

- Knowledge codes (ER+, SR-), where specialized knowledge, principles and procedures are emphasised (ER+) as the basis of achievement (ER-), and the actor’s attributes and dispositions are downplayed (SR-).
- Knower codes (ER-, SR+) where specialized knowledge principles and procedures are downplayed as basis of achievement and where it is the knower’s attributes which are emphasised (SR+).

A translation device was developed to operationalise these concepts in this study (see Appendix 2). A translation device maps the forms the epistemic and social relations take in the data (Maton & Chen, 2016b). ER and SR were operationalised to highlight different dispositions towards the EAP module and the disciplinary module. This shed light on the dominant code orientation of learners and explained the potential clash between a knowledge-oriented literacy provision and their own dispositions towards a language-based module. SR were operationalised to highlight issues of affiliation. Stronger SR were indicated by an emphasis on the membership to the discipline and an affiliation to an authoritative, expert and legitimate disciplinary knower. Weaker SR were indicated by a weaker emphasis on disciplinary membership and affiliation to the undergraduate science student community. These findings were then related to the occurrence of transfer. The rest of this section details the analysis before providing an overview of the results.

When a student emphasised the content knowledge from the EAP module, with precise mention to specific syllabus items (e.g. applying Pattern 2 of thematic progression), or used technical terms from their discipline (e.g. “colonies, solution concentration, protein, DNA, standard curve, relative mobility, linear relationship”), as well as descriptions of discipline-specific processes such as scientific processes (e.g. “in Science you have to explain how you derive...”), these were coded as ER+ (stronger ER). This indicated that the participants characterised the disciplinary knowledge claims as legitimate curricular content.

Participants downplaying the legitimacy of curriculum content knowledge was coded ER- (weaker ER). For example, knowledge in the EAP module may be described as irrelevant, e.g. “I don’t need to do hedging and stuff” *or* “Yes my focus is on results, it’s not the language...” when the participant is in fact using the resources in the assignment. The EAP module may be mischaracterised “In terms of grammar...” (In the context of the SFL-informed EGAP curriculum, where grammatical accuracy was not a focus, this was analysed as mischaracterisation of the knowledge in the EGAP module).

SR were operationalised to highlight issues of identity, affiliation and values. When learners characterised the EAP discipline and their own discipline in different ways, they also signaled a more or less strong affiliation to their discipline or they claimed a more or less central position in their disciplinary community. To analyse this, various elements of SFL were deployed on the interview transcripts. Since a language user is often not aware of any of their linguistic choices in speaking (Polanyi, 1983; Zappavigna, 2013), the way identity and value markers are used in the interviews yielded interesting insights into the reasons why transfer is or is not occurring.

Firstly, affiliation was explored through the use of personal pronouns. Antaki & Widdicombe (2008) for example indicate how pronouns are used to signal membership. In this study, self-mentions and their purpose in the interviews were analysed and compared. All pronouns to refer to the student (either “I” or “we”) were tracked and their purpose was analysed. The results are shown in Table 2 and discussed in the next section.

Secondly, issues of affiliation were also explored using Knight’s (2010) concepts of couplings and bonds. Knight (2010), in her study of laughter in casual conversation, argues that we construct community affiliations through couplings of ideational and evaluative meanings. Affiliation is concerned with how we identify as members of a community. In conversation, this is built gradually as speakers negotiate things, experiences, ideas, or values of particular communities. In this study, students affiliated differently with the EAP module and their disciplinary community, and this became apparent in the way they associated interpersonal (attitudinal) meanings with ideational meanings (their discipline, the EAP module or transfer). Bonds indicating affiliations were therefore also analysed and included, for example:

1. Engineering lab report + ‘quite basic’ (positive evaluation)
2. EAP module + ‘useless burden’ (negative evaluation)
3. EAP content knowledge + ‘THE answer’ (positive evaluation)

This also enabled the researcher to track changes in affiliation across time. For example, the bonds expressed in (2) and (3) above were provided by the same participant who explained how his perceptions changed over the semester.

Results

Although not a focus of this methodology paper, the results are briefly described to show the type of insights which can be gained from deploying LCT and SFL on qualitative data. The theoretical frameworks deployed on the data allowed for a systematic relation between theoretical concepts and empirical data. Specialization and Affiliation accounted for the difference which was observed in the way students reported transfer from the EAP module.

The results indicated that nine out of the twelve participants transferred several elements of the Table of Instantiation/Academic Language Toolkit into their specific disciplinary contexts. This transfer was ascertained both in the interview and through text analysis of the disciplinary assignment and is not detailed here. During the interview, participants showed that they analysed the disciplinary context and made appropriate and deliberate choices from their academic repertoire to make the required meanings. In doing so, they

characterised the EAP module as a knowledge code (ER+) through specific mention of curriculum content as legitimate knowledge. They also affiliated to the undergraduate student community in general (SR-), rather than just their disciplinary community (SR+). Three participants, however, reported little to no transfer at all from the EAP module. These three participants described the EAP module content knowledge as exhibiting weaker epistemic relations (ER-), and strikingly, they affiliated very strongly to their disciplinary community, not as members of the undergraduate student group at the periphery of their disciplinary community, but rather, as members of a more authoritative disciplinary community, one that can sets the norms (SR+). This was shown in the self-mention analysis shown in Table 2 and discussed below.

Table 2.

Frequency and type of self-mention and group affiliation (per 1,000 words)

	Walter	Kali	Sobek	Paul	Dr-Strange	Ben	Reena	Lucy	Julia	Yena	Igor	Jane
I	42	15.8	22	39	21	22.5	21	23	27.2	15.3	20.2	18
We (student group)	9	15.8	1.5	0	0	3.6	11.8	5	15.3	19.7	9	10.3
Use of obligation modality item	9	2.4	0.7	0	0	0	5.4	0.6	0	0	2.2	0
We authoritative	0	0	0	0	0	0	0	0	0	0.34	0.9	3.7

While most students used “we” for self-mention, two contrasting uses of this self-mention appeared. The first one, “We (student group)” in Table 2, reflected the students’ membership in the group of undergraduate science students. This was often accompanied by indications of requirements on the students: “we have to”, “we’re supposed to”, “we are asked to”, and surrounded by powerful, legitimate knowers in the form of the professors or the teaching assistants. The second use of “we”, (“We authoritative”, in Table 2), on the other hand, indicated an authoritative position within the disciplinary community (in bold in the text below). This “we” was used with the present simple tense and circumstantial groups (underlined below) which set the discipline apart: “in Science”, “in Engineering”, “in our discipline”. As shown in Table 2, only three participants (Yena, Igor and Jane), used this strong affiliation to an ideal expert disciplinary knower. These were the three participants who reported minimal or no transfer at all from the EAP module.

1. *we* don't use it in our discipline (Jane)
2. In Engineering *we* don't really use it until we are in final year (Jane)
3. *we* don't get to use the skills that we learn in EAP (Jane)
4. In Engineering, you don't write too much (Jane)
5. *we* actually write another way to write (Igor)
6. in Science *we* just don't write like that (Igor)
7. *We* just use short sentences (Yena)

While the results reported here are necessarily short, they do show the potential for this methodology to allow for a systematic exploration of issues of affiliation and their potential impact on the occurrence of transfer. The results indicated that students' dispositions towards language-based modules such as the EGAP module may prevent them from noticing potential for transfer. The analytical tools deployed here made visible underlying beliefs and dispositions which should be addressed explicitly to foster transfer from EGAP modules. This is an important finding in the EAP field as transfer is an undeniable but elusive goal.

CONCLUSION

Investigating how our students are benefitting from our teaching is a key mission of SoTL. Researching "impact" or "transfer", however, can take many forms according to what we understand these terms to mean and to entail. The study described here started with a very concrete problem: Are EAP students learning academic literacy skills which they can apply beyond the EAP module? Are they getting prepared for the discourse of their discipline (as the EAP module claims to do)? What are they transferring from the EAP module to their actual specific context, as they write a lab report in Life Science, a mathematical proof, a sociological essay, or a business report?

Designing the study involved reflecting on the way transfer can be investigated in this specific context. The concept of transfer was unpacked in order to make informed methodological decisions. This led to a research design which took into account the complexity of the issue of transfer and engaged with a range of data and two main analytical frameworks to explore qualitative data in a systematic manner. The combination of aspects of LCT and SFL theories led to several findings, one of which was explained in this paper—that learners' stronger affiliation with a disciplinary group may impact transfer negatively.

These insights into the processes of and the hindrance to transfer from a general EAP module might have remained invisible had the analysis been limited to a thematic/content approach.

Looking beyond this specific context, this paper has shown that SoTL research can be enhanced by deploying theoretical frameworks to understand various problems and challenges in educational settings. Specifically, this study has demonstrated the complementary explanatory power of LCT and SFL and joins a growing number of studies that have enacted aspects of both theories (Hood, 2016; Macnaught, Maton, Martin, & Matruglio, 2013; J. L. Martin, 2016). Without explicit theoretical and analytical frameworks to engage with qualitative data, we may miss the underlying nature of the problem we are investigating (Maton *et al.*, 2016). While this paper has briefly described Specialization, other dimensions can be enacted to address different problems. LCT research, enacting Semantics and more recently Autonomy, has addressed a wide range of educational problems in various disciplines. In this paper, it has been argued that LCT should be part of an “SoTL commons”, where the theory would provide a common theoretical language to support interdisciplinary SoTL dialogue about the common challenges we face with our students’ learning, and the investigation of our educational practices.

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ENDNOTE

1. <https://sydney.edu.au/arts/our-research/centres-institutes-and-groups/lct-centre-for-knowledge-building.html>.

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APPENDIX 1. TABLE OF INSTANTIATION/ ACADEMIC LANGUAGE TOOLKIT

GENRE Social Purpose/ Generic Stages	<p>Linguistic Systems and Features (examples in italics).</p> <hr/> <p>Toolkit #1 to organize a text: Textual cohesion (overarching term provided to students) Macrotheme (Thesis statement) and Macronew (conclusion) Hyperthemes (Topic Sentences) and Hypernew (concluding sentences)</p> <ul style="list-style-type: none"> • General nouns: <i>problems, causes effect, impact, reasons, issue...</i> • Nominalisation (see below) • Referencing pronouns and other words: <i>Shopping centres → they → such places</i> • Conjunctions (linkers): <i>however, as a result, beyond...</i> <p>Cohesion at paragraph level:</p> <ul style="list-style-type: none"> • Lexical chains: <i>Singapore → the city-state → the red dot → the island-state</i> • Reference and Substitutions: <i>Shopping centres → they → such places</i> • Lexical field/sets (related words): <i>computer components, printers, CPUs, memory chips</i> • Thematic progression A → B B₁ → C A → B A → C A → B B₁ → C B₂ → D <hr/> <p>Toolkit #2 to express logical links: Conjunction (overarching term provided to students) Logical links between clauses in complex sentences</p> <p>Clause complex (sentences with more than one clause) Non-defining relative clause: <i>The study, which explored...</i> Time: <i>while, as, before, after, until, as soon as...</i> Manner: <i>as</i> Cause, condition, concession: <i>because, in order that, in case, if, unless, although, while, whereas</i> Projection: <i>state, suggest, argue that...</i> Expressing conjunction in the verbal group: 'can lead to' (in the example below)</p> <hr/> <p>Toolkit #3 to express the subject matter Taxonomies (classification, composition) Noun Group (headnouns are in bold) <i>Continued exposure to such chemicals can lead to reduced functioning of the auto-immune system</i></p> <p>Modifiers:</p> <p>Prepositional phrase: <i>of the auto-immune system</i> Adjective: <i>insightful, debatable</i> Defining relative clauses: <i>The researchers who discovered the molecule had two merits.</i></p> <p>Nominalisation (often combined with prepositional phrase): Verb → noun: <i>to formulate → formulation</i> Adjective → noun: <i>complex → complexity</i></p> <hr/> <p>Toolkit #4 to express evaluation and stance: Appraisal and Engagement Modality:</p> <p>Modal verbs: <i>may, might, could</i> Adverbs: <i>perhaps, probably</i> Quantifiers: <i>some</i> Other mental and material verbs: <i>appear to + V/ seem to + V/ tend to + V</i> Other expressions: <i>x is likely to + V/ there's a tendency for x to + V</i></p> <ul style="list-style-type: none"> • Reporting Structures: <i>The research report concludes [that + SV]. As Jones (2010) argues; According to Zhang (2009), ...</i> • Endorsing and Distancing: Evaluative reporting verbs: <i>claim, suggest, demonstrate...</i> Intensifying/limiting adverbs: <i>clearly, unambiguously, strongly/somewhat, to a certain extent</i> Concessive clauses: <i>although...while...</i>
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APPENDIX 2. TRANSLATION DEVICE FOR SPECIALIZATION CONCEPTS

EPISTEMIC RELATIONS			SOCIAL RELATIONS		
ER +	Indicators	Examples from empirical data	SR+	Indicators	Examples from empirical data
Content knowledge (in the EAP and/or the disciplinary module) is emphasized	Mention of specific syllabus content	<i>applying pattern 2 of thematic progression (Dr Strange)</i>	Strong indication of membership to the discipline is emphasized	Personal opinion is viewed as legitimate and authoritative knowledge.	<i>We don't use it in our discipline (Jane)</i> <i>In Science we just don't write like that (Igor)</i>
	Use of technical terms	<i>colonies, solution concentration, protein, DNA, standard curve, relative mobility, linear relationship (Yena)</i>		Personal pronouns 'we' and determiners 'our' are used to affiliate participant with expert, legitimate disciplinary knower.	<i>We just use short sentences (Yena)</i>
	Description of processes such as scientific processes in the discipline	<i>In Science you have to explain how you derive... (Yena)</i>			
ER -	Indicators	Examples from empirical data	SR-	Indicators	Examples from empirical data
Content knowledge (in the EAP and/or the disciplinary module) is downplayed	Content knowledge is minimized or described reductively	<i>In terms of grammar... (Yena)</i>	Membership to the discipline is not emphasized	Legitimate knower refers to expert knowers in the discipline (not the student)	<i>The TAs... The prof want us to...</i>
	The knowledge is not seen as useful.	<i>"I don't need to do hedging and stuff." (Jane) it's [Engineering lab report] quite basic (Jane)</i>		Personal pronouns 'we' are used to affiliate participant with the undergraduate science student group (not the expert knower) and is used with modals of obligation.	<i>We have to... They tell us to</i>
	Knowledge, if mentioned, does not contribute to achievement in the discipline.	<i>"it's more like generally [general knowledge, not from the EAP module], coz always writing essays as a child so unconsciously" (Yena)</i>			