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Strategic Vocabulary Learning in the Swedish Second Language Context

(Swedish Summary)

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Abstract

This large-scale research project represents an exploratory investigation into the reported vocabulary learning strategies (VLS) used by adult, beginner Swedish L2 learners living and studying in Sweden. A questionnaire instrument, the Swedish Vocabulary Learning Strategy Survey (SVLSS) built explicitly for data collection in this context is developed and used over the course of five studies regarding learners' approaches to Swedish L2 vocabulary learning.

Results from the first study are used to establish a preliminary item list for the SVLSS from collected interview and learning task data. Pilot results (SVLSS 1.0, 1.1) guide revisions to accessibility, readability, and item list, resulting in a 74-item questionnaire (SVLSS 1.2). The second study adopts a six-category VLS taxonomy for the instrument that is extracted through the guidance of exploratory factor analysis. Findings are used to conduct revisions aimed at supporting the adopted taxonomy, and again to improve accessibility, and readability. The third study situates the SVLSS instrument within a comparative review of other VLS questionnaires, guiding extended revisions started in study two. Revision results in the acceptance of an updated VLS taxonomy, and in the 69-item SVLSS (2.0). The fourth study explores what the target demographic believes it means 'to know a word' as a means of better these learners' vocabulary learning experience. The fifth study uses the SVLSS 2.0 to explore possible patterns in learners' VLS use across demographic grouping variables, offering two emergent learner profiles.

Findings across these studies indicate that adult, beginner learners of Swedish L2 vocabulary report using strategies for establishing new word information more than any other VLS type, suggesting that the need to acquire vocabulary knowledge before it can be used in other strategic manners is high for this demographic. Also, significant differences between learners' use of VLS are seen even amongst relatively minor differences in learners' beginner proficiency levels, adult age groups, and amounts of time spent learning the language. A synthesis of findings suggest that these learners value communicative practices for learning words, though may not be able to reflect this in their learning behavior at earlier levels of Swedish.

This report concludes with suggested use guidelines and planned updates for the SVLSS instrument, as well as suggested and planned future research for the field of Swedish L2 VLS use.

KEYWORDS: Second Language Acquisition, Vocabulary Acquisition, Language Learning Strategies, Adult Language Learning, Questionnaire Instrumentation.

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Dedications

To anyone who has ever stepped into a new place and has had to 'learn the language' to move forward.

This book is for you.

~

Although it is perhaps somewhat cliché to open a doctoral thesis dedication with an idiomatic platitude, I just can't seem to get this one out of my head. So, in it goes.

"It takes a village to raise a child."

If this volume might be considered my child, or at least the culmination of over four years of work and education, it would be a disservice to refer to those who have been instrumental in its maturation as merely 'a village'. In light of this, I'd like to amend the saying:

"It takes a shining, brilliant community of caring, patient, and intelligent professionals, friends, and family members to raise a doctoral student."

That's better. Now, then.

I would like to express my unrelenting gratitude and appreciation to my supervision team, Sofie Johansson, Julia Prentice and Tommaso Milani, who have believed in me and this research project from its overly-ambitious (but thankfully tempered) start. Furthermore, special thanks are due to the Royal Society of Arts and Sciences in Gothenburg, who provided funding that facilitated the presentation of this project abroad.

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Thanks must also be proffered to Birgit Henriksen and Peter Gu, whose work in vocabulary acquisition and strategic vocabulary learning have been original motivations for this project from the very start.

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On a personal note, special thanks need to be granted to a few special people.

First and foremost, to my mother, Paula LaBontee, my father, Richard LaBontee, and my sister, Lyndsey LaBontee. Without the loving, supportive, and genuinely compassionate relationships that I have been inexplicably gifted by each of you, I would not be able to accomplish anything in my life. In a sense, this book also belongs to you. I love you all.

The devastation felt from the loss of aunt Debbie and uncle Bugga' during the course of this work cannot be overstated. This work is dedicated to you both. I hope you have both found peace, together.

Leen Bellens. You are the cornerstone upon which all of this is built. But you already knew that.

Thanks must also go to the illustrious and good-natured members of the Gothenburg performing arts community who have given me shoulders to lean on, ears to gab off, and a stage upon which to 'get it all out'.

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Thank you all for everything.

Yours,
Ricky

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Terminology

The below list of terminology provides a quick reference to the definitional conventions used in this research project. Each term references the page number(s) where each definition is discussed in the text, if applicable. A table with all acronyms or abbreviated language appearing in the text is also included in the sections below for reference.

Key Terms

Attention	Schmidt (2001) summarizes that attention is: limited, selective, subject to voluntary control, controlling access to consciousness, essential for the control of action, and essential for learning.
Critical Period Hypothesis	The CPH posits that learners' rate and attainment of language learning becomes deficient after a certain age boundary, and thus a period of 'peak sensitivity' is theorized to exist nearly from birth to pre-puberty age (Singleton 2005).
First Language (L1) [Mother Tongue] [Native Language]	The language (monolingual) or languages (bilingual or multilingual acquisition) that children learn from language users (parents, siblings, caretakers) during critical years of development (Ortega 2014).

Individual Differences	The unique, constructing, semi-dynamic, social features of learners' identities as embedded in particular contexts and that influence motives, behaviors, personalities and agency in language learning contexts (Ushioda 2009). Benson and Gao (2008) divide individual differences into two separate dimensions: innate attributes that are inherent to learners' identity that do not readily shift with dynamic contextual factors (i.e., age, gender, aptitude) and 'acquired attributes' of learners that are subject to and affected by contextual, momentary and environmental influence (i.e., motivations for learning, learning beliefs, attitude).
Instrumentation Transparency	Clear and detailed reporting on why and how instruments used for research purposes are designed, populated with content, evaluated, revised, and distributed. Practiced with intentions to facilitate replicability of methods, and to clarify where collected data comes from prior to analysis and interpretation, thus rendering research findings as clearly accessible as possible.
Language Learning Strategy (LLS)	Complex, dynamic thoughts and actions, selected and used by learners with some degree of consciousness in specific contexts in order to regulate multiple aspects of themselves for the purpose of accomplishing language tasks; improving language performance or use; and/or enhancing long-term proficiency (Oxford 2017).
Language Proficiency	A measurement of a language user's collective productive and receptive knowledge and skill with a given language. All mentions to proficiency are based within the Common European Framework of Reference (CEFR) (Council of Europe 2001).
Learning Belief	Beliefs aimed at reflections on the nature of what they regard as knowledge that extend to filtering individual's learning experiences (McGee 2012), and that influence behavior, motivation, and strategic approaches to learning and performance (Hofer 2001).
Learning Style	An individual's natural, habitual, and preferred way of absorbing, processing and retaining new information and skills (Kinsella 1995) that tend to be used throughout many realms of study. Often described through a learner's learning strategy preferences.
Lexicon	"A memory system in which a vast number of words, accumulated in the course of time, has been stored" (Hulstijn, 2000:210). This system is complex, dynamic, and associative in organization, can include multiple languages' units, integrated and separate, and is characterized by fluidity and flexibility in accessibility (Aitchison 1990). The lexicon refers to the entirety of collective word knowledge features known by a language user.
Metacognition	Reflective practices of thinking about one's own thinking and learning processes. Metacognition in SLA can be actualized as self-regulating one's learning, considering one's progress in linguistic development, reflecting on one's motives for learning and autonomous behavior, or recognizing one's learning strategy use and learning style, for examples.

Motivation	The dynamically changing cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritized, operationalized and (successfully or unsuccessfully) acted out (Dörnyei & Otto 1998).
Multilingual	Possession of knowledge of multiple languages. These languages can be represented as L1(s) and/or L2(s). This linguistic knowledge can be used communicatively, productively, or receptively to any extent, in a variety of geographical or societal contexts.
The Noticing Hypothesis	Attention, on the levels of and noticing and being aware of linguistic input, is necessary for any acquisition of second language to transpire (Krashen 1981).
Receptive-Productive Knowledge	Receptive knowledge is linked to the skills of listening and reading, both forms of receiving language input and our interpretation of it. Productive knowledge is enacted through writing and speaking skills, utilizing recall and construction of word knowledge to convey messages (Nation 2013).
Second Language (L2) [Additional Language]	Any language learned after the L1 (or L1s). This may refer to a third, fourth, tenth, etc. language learned in life, and does not presuppose any sequential or chronological value (Ortega 2014).
Second Language Acquisition	The scientific discipline of studying the learning and acquisition of second languages (see above), a subdiscipline of applied linguistics and related to psychology, sociology, and education.
Self-regulation	Regulation of one's learning processes with regards to monitoring and attendance to the learners' feelings, planning of learning, motivation, reflections on the learning process and language development, and learner autonomy.
Socio-cultural theory	Human behavior as described through the mediated interaction that the mind, situated in a body, experiences through its environment. This interaction is mediated by actual, symbolic, and psychological tools that are created, given value and modified by human cultures (Lantolf 2000).
Target Language (TL)	The language that a learner plans to or is actively trying to learn.
Vocabulary	The aggregate word knowledge related to a range of words in a specific context, for example, the Swedish language. This can refer both to the word information already known by a learner, and the word information that is yet to be learned.
Vocabulary Learning Strategy (VLS)	Teachable, dynamic thoughts and behaviors that learners consciously select and employ in specific contexts to improve their self-regulated, autonomous L2 vocabulary development (Oxford 2017).

Word	Semantic symbols that act as manifestations of systemic and semantic thought, used to carry meaning from human to human (Bakhurt 1991).
Word Knowledge	The complex and varied features of words that can be known and that are used in language production, recognition and recall. This knowledge is conceived of as productive or receptive, and encompasses many concepts represented by a word's form, meaning, and use (Nation 2013).

Acronyms and Abbreviations

Acronym	Term
CEFR	Common European Framework of Reference
CPH	Critical Period Hypothesis
EFA	Exploratory Factor Analysis
EFL	English as a Foreign Language
ESL	English as a Second Language
L1	First/Native Language(s)
L2	Second/Additional Language(s)
LLS	Language Learning Strategy
SAS	Svenska som andraspråk [Swedish as a second language]
SCT	Socio-Cultural Theory
SILL	Strategy Inventory for Language Learning (Created by Rebecca Oxford)
SLA	Second Language Acquisition
SVLSS	Swedish Vocabulary Learning Strategy Survey
TL	Target Language
VLQ	Vocabulary Learning Questionnaire (Created by Peter Gu)
VLS	Vocabulary Learning Strategy
VLSQ	Vocabulary Learning Strategy Questionnaire (Created by May Fan)
VOLSI	Vocabulary Learning Strategy Inventory (Created by Ilka Stoffer)

1. Introduction

1.1 Organizational Outline

This introductory chapter (1.0) will briefly outline background information for the project at hand regarding the research context, motivating factors, research aims, and will describe a schedule of research performed under its purview.

The following chapter (2.0) will describe in further detail background knowledge related to theoretical and ideological paradigms anchoring this project, as well as survey research performed in relevant fields of study related to themes and material related to the project.

Next, a chapter (3.0) detailing the methodological approaches applied to studies performed in this research project is presented, including information regarding the participant population involved in all studies, reasoning behind methods adopted, chosen analyses performed on collected data, and a thorough reporting of instrumentation practices applied during this project.

Following methods, a chapter (4.0) containing summaries of all studies performed during this research project are presented. Each study, its key findings, and some implications are reported in each section, as well as data or findings that were not able to be included in the body of articles that constitute this project. This summary chapter ends with a synthesis of results from all studies that is used to confront the project aims and research purposes listed in section 1.3.2.

The next chapter (5.0) engages in a discussion of reflections on implications regarding the methods and instruments used, classification systems and defini-

tions of vocabulary learning strategies and how they may affect data collection and analysis, and what individual differences of language learners can tell us regarding strategic vocabulary learning. This discussion chapter closes with a section describing suggested uses for the SVLSS instrument created and developed throughout this research project.

The final sections (6.0) of this project describe limitations of performed research with relation to participant sampling, instruments used, and representations of strategic learning, then use these limitations as motivating factors for proposed updates to the SVLSS instrument as well as suggest the shape and direction of future research into strategic vocabulary learning for the Swedish L2 learning context. Concluding remarks (7.0) are made, summarizing the key points for this research project.

1.2 Background

In 2013, 15,357 migrants were furnished work permits to live in Sweden, and 49,870 people were granted asylum within Swedish borders. Since 2005 up until 2015, Sweden has seen a 43% increase in the number of migrants welcomed to live there (Migrationsverket 2017). As part of their integration into life in Sweden, these migrants will meet expectations to learn about Swedish social culture, and to acquire a command of the Swedish language. Many of these migrants will attend the government-sponsored Swedish For Immigrants (SFI) course in an extremely intensive L2 learning environment (Skolverket, 2016a, 2016b), or enroll in Swedish as a second language (SAS[1]) courses intended for adult learners. Support for teaching SAS, as well as debate over the underpinning reasons for offering SAS programs (Hyltenstam & Miliani 2012; Lindberg & Sandwall 2012) and how they should be facilitated (i.e. Sandwall 2010), have been hot linguistic topics in Sweden over the years. In the academic context, migrants to Sweden are often expected to learn Swedish language up to a communicative level for work or education purposes. These language expectations are even being stated in and supported by university policy documentation (Karlsson 2017). With such societal pressure on learners, success in SFI and university SAS programs can hold a determining influence on the future extent of success in education, labor-market entrance, and socio-cul-

1 *Svenska som andraspråk* [Swedish as a second language] will be referred to as SAS throughout. This acronym is often used to refer to adult education in Swedish as a second language and is used here as shorthand when referring to this context.

tural integration for migrants in Sweden (Hyltenstam & Milani 2012). These learners need support in their language learning processes that is focused on acquisition, reflective of their approaches to learning, and that provides productive tools to instructors to facilitate this kind of support.

One of the most crucial areas of language study when encountering a new language is vocabulary learning. Words represent the building blocks of language learning. Words equip new learners with the tools needed to learn about and engage with the many systems that define a language (e.g. grammaticality, phonetics, semantics), enable communication between users of that language, and promote entrance into the socio-cultural communities that are linked with the use of that language. Many avenues of investigation are available with which to explore learners' vocabulary acquisition in the SAS context. Few, however, provide access to a more holistic perspective of learners' approaches that can be used to establish helpful illustrations of how learner groups function in SAS learning. Surveying learners' approaches to vocabulary learning strategy (VLS) use, or their goal-oriented strategic behaviors that they chose to help them learn second language vocabulary, can open a window into how SAS learners are learning vocabulary. This is important information that can be used to encourage reflective learning practices by students, to equip instructors with a more sophisticated understanding of their students' vocabulary learning needs.

In this chapter, brief introductions of key areas regarding strategic vocabulary learning in the adult Swedish second language learning context in Sweden will be outlined (sections 1.2.1, 1.2.2 and 1.2.3), leading to motivating factors for the research project reported on in this volume (section 1.3). A timeline of research activities for the project is presented in section 1.3.3.

1.2.1 SFI and SAS Contexts in Sweden

In Sweden, Swedish as a second language learning and instruction for adults is situated in two major contexts: the government-provided Swedish for Immigrants program (SFI), and Swedish as a Second Language (SAS) courses offered by educational institutes across the country.

SFI is provided by local municipalities for new adult migrants into those areas, whereas SAS teaching and support is made available in public schools at the *grundskola* and *gymnasiet* level alongside mother-tongue instruction, but is also adapted and delivered by adult education institutes (i.e. universities, community colleges) throughout Sweden. However, the efficiency and results of these programs, originally intended for cultural, linguistic and career-based integration into Swedish society, have been regarded with questioning over the actual influence that program policy ideologies have on actual

practices (Hyltenstam & Milani 2012). SAS curriculum and teaching practices at Swedish higher education institutes are primarily informed and built according to steering documentation offered by the Swedish National Agency for Education.

In this section, an introduction to the teaching and learning guidelines delivered through the top-down approaches endorsed by the Swedish National Agency for Education will be presented in an effort to provide a useful illustration of the adult Swedish L2 learning context in Sweden.

Steering documents established by the Swedish National Agency for Education (Skolverket 2016a, 2016b) clearly outline several goals of Swedish language education intended to guide the nature of SFI programs, which are government sponsored courses built explicitly to deliver SAS instruction to recently arrived migrants. SFI education seeks, overall, to give adult migrants with mother tongues other than Swedish a basic knowledge of Swedish as a second language with which to communicate and participate actively in daily societal and working life. This education also aims to support literacy development for non- and low-literate language users, including instruction in using the Swedish alphabet. Three study routes exist for SFI. Route one includes courses A and B, designed for learners with little experience of studying, and accounts for proficiencies at A1 to A2 under the common European framework for language proficiencies (CEFR)[2]. Route two includes courses B and C (A2/A2+), and route three, designed for students accustomed to study, includes courses C and D (B1/B1+). SFI students may approach the study of SFI through any route, but also should be afforded the opportunity to study up to course D.

However, the intended learning aims of SFI programs do not necessarily align with actual practice or the received education of learners. The planning of SFI courses according to steering documentation seeks to take account for the individuality of students enrolled in the program; "The education is intended for persons with different experiences, life situations, knowledge and study goals. The education should be planned and organized together with students and adapted to their interests, experiences, all-around knowledge and long-term goals" (Skolverket, 2016b:1). Such statements clearly underline the advance consideration of individual differences in learners, differentiated instruction, and overall good practices for SFI programs. However, is it often unclear whether SFI adequately prepares learners for employment and induce

2 Where A1 = Complete Beginner learner, moving towards C2 = fluent speaker of a second language. This framework was created with intention to both sort groups of learners at various proficiencies, and act as a measurement rule in which learner 'can do' abilities are evaluated in rubric format.

self-sufficiency for living in Swedish society research, as supposedly stipulated by the main focus and responsibility of the program (Sandwall 2010). Though the education is repeatedly described in steering literature as focused on student interests and individual differences, the direction of the program is operated by a pervasive top-down agenda as a political labor market instrument with short-term measurements of achievement that seem to only support an economic purpose (Lindberg & Sandwall 2012). Such economic and political focus on the expected results of SFI programs has had consequences on teacher training and effectiveness, and obscure the level of success regarding learners' societal integration connected to the program (Lindberg & Sandwall 2007).

SFI instruction is intended to provide students with *communicative* language skills, following the recent trend in second language teaching that values communicative ability in a new language over memorization or translation-based grammatical and vocabulary knowledge. These language skills presuppose access to a language system (i.e. words, phrases, pronunciation, grammatical structure) and knowledge of how those patterns are used (Skolverket 2016b, p.1). SFI steering tenants also focus on the ability of learners to use strategies in effective ways to communicate messages, make choices for functional language use, and adapt to context needs for communication. This includes development of intercultural competence through reflection of new experiences and comparing these with daily, societal and working life phenomena in Sweden and the Swedish language. A major component of SFI that strives to prepare students for the aforementioned competencies is the work placement offered to students to spend time in a Swedish workplace as a form of language education in actual practice. An example of this disconnect between planned policy and practice appears in Sandwall's (2010) case study of an SFI student in her work placement. The work placement experience of the student offered her "little vocabulary or language practice with particular relevance for employment or working life" (p. 558), due to the student being "more engaged in tasks and activities than in language learning… little space for asking questions", and when co-workers were engaged in Swedish conversation during breaks or lunch on various work-related or private topics, the learner "found it difficult to join and was seldom invited to take part" (p. 559).

In sum, language instruction that is informed by politically charged policy design and assessment decisions made with labor-market integration for students as a primary goal may result in less effective learning at the classroom level, and may contribute to obscuring evaluations of what exactly learners get out of SFI programs (Hyltenstam & Milani 2012).

The above examination of steering connected to SFI programs is relevant also when considering adult migrants learning Swedish language in continuing education contexts. Steering documentation from the Swedish Na-

tional Agency for Education is used to inform SAS instruction at the tertiary education level in Sweden, alongside input from stakeholders from individual institutions. Universities have established language policies that help govern expectations of language competency and use for students and faculty in both classroom and administrative contexts. A nation-wide university policy endorsing improved internationalization has been in effect for the time period of 2014-2020, which, among a range of stipulations regarding equal treatment and access for students and faculty, focuses on fostering linguistically diverse academic environments while still recognizing Swedish as the official language of workplace and academic communication[3]. This holds for a variety of contexts for most universities, including but not restricted to teaching, administration, meetings, and documentation (see Karlsson, 2017 for a comprehensive review of university-level language policies in Sweden). As a relevant example, the university of Gothenburg is where much of the research for the project at hand originated and was performed. The university practices a 'parallel languages' approach, meaning that although English can be used as a facilitating language, Swedish remains the official language of communication for all university contexts (Gothenburg University 2015:3). First-cycle studies should "result in students being able to express themselves in clean and comprehensible Swedish in matters relating to their studies" (p. 3), and second-cycle students and (international) faculty are expected to be able to communicate with some competency in Swedish language, though not explicitly stated in policy.

Swedish language acts as an important integration tool for academic, social and professional contexts for adult migrants to Sweden. The steering policies of SFI and therefore SAS are well-intentioned, but the actual delivery of these programs may fall short of the needs or expectations of Swedish L2 learners who seek to benefit from their guidance. A somewhat under investigated area of research related to adult Swedish L2 learners, strategic vocabulary learning, is explored in this work as a function of supporting the language learning needs of this demographic and to facilitate better understandings of their actual learning experiences.

3 With the exception of Stockholms Handelshögskola, where English is the main language of instruction (Karlsson 2017)

1.2.2 Vocabulary Acquisition and Vocabulary Learning Strategies

Learning the vocabulary, the words, of a language is crucial for language learners at any level of study or use. In terms of reading, it has been suggested that in order to comprehend a text, a learner should know 95% to 98% of the lexical items used to be able to successfully guess unknown words (Hu & Nation 2000; Laufer 1989; Nation 2013). Furthermore, using English as a template, L2 learners should know somewhere in the ballpark of 6000 to 9000 word families in order to account for 98% coverage of texts in the L2 such as novels, newspapers and colloquially spoken language (Nation 2006; Nation 2013). Even at pre-beginner (e.g. pre-A1) levels, it is estimated that at least 100 to 400 word families must be known in order to support low levels of comprehension for facilitating further learning (Nation & Crabbe 1991).

This massive number of words needed 'known' to consider oneself fluent in language comprehension and use is a tremendous obstacle for L2 learners (Schmitt 2010) especially beginners, who are expected to learn large amounts of new vocabulary quickly to facilitate communicative practice in the L2 (Oxford 2017). One avenue of research and instruction in L2 vocabulary learning has involved learners' use of vocabulary learning strategies (VLS) as tools for making vocabulary acquisition more efficient, effective, and enjoyable. VLS, in this project, are characterized as "teachable, dynamic thoughts and behaviors that learners consciously select and employ in specific contexts to improve their self-regulated, autonomous L2 vocabulary development" (Oxford 2017:244). Studies have been performed in a variety of contexts that have examined the influence that learners' reported VLS use has had on their vocabulary learning and language learning processes. This research has shown that higher frequency and range of VLS use has been linked to high levels of language proficiency (Fan 2003; Loucky 2006; Stoffer 1995), higher levels of motivation for vocabulary learning (Fu 2003; Gu & Johnson 1996; Marttinen 2008), and greater levels of language learning achievement (Ahmed 1989; Kojic-Sabo & Lightbown 1999; Sanaoui 1995). Classroom efforts to instruct L2 learners on what VLS are and how to use them have resulted in significant improvements to vocabulary learning (Nyikos & Fan 2007) as well as expanded VLS repertoires, higher frequencies of VLS use, and improved vocabulary learning motivation (Mizumoto & Takeuchi 2009).

The project at hand uses VLS as a central focusing tool with which to explore Swedish L2 vocabulary learning. The study of VLS has experienced a successful history using questionnaire instruments intended for mass data collection and interpretation (Fan 2003; Gu & Johnson 1996; Schmitt 1997; Stoffer 1995). As VLS use has only seen cursory investigation in the SAS context (see below),

a large-scale data collection approach was utilized in order to provide a wide-reaching exploratory illustration of the area that future research might build upon.

1.2.3 VLS Use in Sweden by Adult L2 Swedish Learners

In Sweden in the 1980's and 90's a research initiative known as the *STRIMS-projektet* performed exploratory investigations of the kinds of LLS public primary and secondary school students in Sweden use for learning modern world languages, including Swedish as a L2 (Tornberg, Öman, Bergström & Håkanson 2000). However, there exist relatively few academic studies that investigate adult migrant use of learning strategies for vocabulary acquisition in beginner Swedish second language learning contexts.

Granberg (2001), in a qualitative case study, interviewed adult Swedish L2 learners on their language learning situated in the Swedish immigrant context, and used Oxford's (1990) Strategy Inventory for Language Learning (SILL) with a single learner to supplement collected interview data. Sandh (2013) utilized a demographic survey alongside the SILL, intending to gather data on vocabulary learning strategy frequency of use for two groups of adult, mixed-proficiency Swedish L2 learners ($N = 30$). However, the SILL is intended for overall language learning strategies and is not designed or validated for collecting data on learning strategies performed with a specific knowledge goal in mind (i.e. vocabulary acquisition). Both studies use language learning strategies as a supplemental descriptive tool with which to describe the behavior and processes of Swedish L2 learners within their learning context(s), but do not give the findings more reflection than as a cursory note.

Other research has focused on young or adolescent learners of Swedish as a L2, collecting LLS or VLS data again as a smaller component used to help flesh out a description of learners' L2 learning experience in Sweden. For example, Allestam (2007) and Malmberg (2000) conducted studies that sought to illustrate young-to-adolescent learners' Swedish L2 learning situations by collecting a variety of data including LLS used, but did not report specifically on strategy use. Magnusson and Öggesjö (2013) discovered through interviews with learners that contextual and learning factors influenced young public-school aged English and Swedish L2 learners' motivations for learning and VLS use related to language learning.

As the adult Swedish L2 learner VLS use context has seen sparse amounts of explicitly performed research and little connection to pedagogical use, an investigation into the learning practices and experiences of this demographic is warranted. Further, as no instrument designed with the expressed intent of col-

lecting data regarding VLS use within this context exists, the creation of one to perform context-situated research would contribute to the body of available research. The instrument as well as findings regarding an exploration into VLS use in this context can also be interpreted to support practical classroom application for Swedish L2 instruction.

1.3 Motivation

The motivation for this research project was inspired by several factors stemming from a lack of clarity in representations of the SAS learner experience (section 1.2.1), the importance and benefits of strategic vocabulary learning (section 1.2.2), and the lack of explicit research tools and investigation into adult Swedish L2 VLS use in Sweden (section 1.2.3).

A survey of SLA research concerning beginner adult, SAS learning in Sweden shows that this field is strongly interested in the experience of the language learner (e.g. Bunar 2010; Carlson 2002; Lindberg & Sandwall 2012) and political considerations related to SAS and SFI programs (Hyltenstam & Miliani 2012; Lindberg & Sandwall 2007; Sandwall 2010). Research has also focused on learners approaches to learning vocabulary in L2 Swedish (Enström & Holmegaard 1994; Eriksson & Tholin 1997; Tornberg 2005; Viberg 1988), though a relatively less-researched area of beginner adult SAS vocabulary acquisition is the explicit cataloguing and interpretation of adult, beginner learners' *strategic* behavior linked to vocabulary acquisition. Research into learning strategies in SAS contexts has mostly been relegated to supplementary material collected as part of larger projects (Granberg 2001; Sandh 2013; Wareborn 2004) or has focused on younger learners in public school systems (Allestam 2007; Magnusson & Öggesjö 2013; Wareborn 2004). The current project seeks to perform an exploratory investigation of strategic vocabulary learning for adult beginner learners of Swedish in an effort to round out the area of vocabulary learning strategies in SAS and to provide a clear preliminary account of the strategic learning approaches that adults use in the SAS context that can support further study in the area.

The initiating source of methodological inspiration for tackling the above issues was the work of Fan (2003), Gu and Johnson (1996), Stoffer, (1995), and Schmitt (1997) in their creation and use of various vocabulary learning strategy taxonomy and related questionnaires. These instruments were used to investigate the kinds of vocabulary learning strategies that certain groups of learners use to enhance their learning. During the planning phase of how to approach data collection for this research project, an adapted version of Peter

Gu's (Gu & Hu 2013) Vocabulary Learning Questionnaire (VLQ5) was distributed to about fifty SAS students at the university level to determine if the instrument would fit the intended demographic and learning context. From a combination of item-to-item feedback and informal interviews with participants after they completed the VLQ5, it was found that learners overwhelmingly felt that the VLQ5 did not provide coverage of the kinds of vocabulary learning strategies that learners used, and that a deal of items were felt to be dated or irrelevant to their learning situation.

Responding to this finding, a secondary intention for this research project emerged, shifting focus to include the design and validation of a new instrument for collecting data on adult SAS vocabulary learning strategy use for beginner learners of Swedish. This instrument could then be offered to SAS instructors and classrooms as a pedagogical reflective and diagnostic tool. The project adopted an exploratory nature in order to assemble a preliminary illustration of what adult SAS strategic vocabulary learning looks like without being influenced by findings from other learning contexts (e.g. other language learned, other country, other student demographics).

For the sampling frame used in this research project, a convenience sample of student participants at institutes of higher education in Sweden was selected in an effort to involve as many participants as possible. Adult learners were selected due to the comparatively scant body of research that concerns the strategic study habits of adult learners in the SAS context. Furthermore, younger learners operate within a different psychological paradigm than adult learners (see section 2.1.4 on adult learning) and were therefore removed from the sampling frame to maintain some level of demographic homogeneity. It was also decided to collect as much data as possible (within time and sampling restrictions) from SAS learners that span a variety of mother tongues and levels of multilingualism. This choice was made in order to explore the possible differences in strategy use patterns reported by these groups. Users of Nordic languages (i.e. Norwegian, Danish, Finnish-Swedish) as their native language were removed from collected data pools due to the typological similarities and mutual intelligibility between Swedish and those languages (Gooskens, 2006; Haspelmath 2001).

A schedule of research studies (section 1.3.3) was developed and performed with intentions to establish a preliminary account of strategic learning approaches by adult, beginner SAS learners' approaches to strategic vocabulary learning, and to create a reliable instrument with which to collect data on SAS learners' reported approaches to strategic vocabulary learning.

1.3.1 Rationale

This research project follows the assumption that adult, beginner, Swedish L2 learning and teaching of vocabulary can benefit from the support of research-based evidence that describes the form and use of various strategic approaches by the target demographic. The benefits of vocabulary learning strategy use have been seen in improved vocabulary acquisition, retention, and production, and higher motivation and confidence in vocabulary learning (see section 2.2.3.3). This is especially true for learners who have been taught how to use strategies effectively, who command wide repertoires of strategies for use in various contexts, and who tend to use strategies more often than not (see sections 2.2.2.2 and 2.2.3.3). Thus, exploring strategy use in vocabulary learning can help practitioners and researchers 'see the gaps' in the known and not known strategies reported by both individual learners and groups of learners. This insight can then be used to move forward with diagnostically-informed instruction centered on improving learner awareness of how extensive (or limited) their 'strategic tool belts' are, and how to use strategic learning to their advantage.

Learners' strategic vocabulary learning choices and preferences are subject to both contextual and individual differences. Learning more about learners' individual differences, such as their motivations for learning Swedish language, their learning styles, or even what they consider to be vocabulary knowledge, can be coupled with reported VLS use data to investigate the possibility of correlations between types of learners and their use of strategies. Other demographic differences, such as age groups, education, and language background, can also be used to investigate possible correlations between learner groups and strategy use. Fostering a better understanding of how certain learner groups approach strategic learning can help to better inform and equip practitioners for strategy instruction that can lead to more effective learning of vocabulary in the Swedish L2 context.

A questionnaire instrument specifically designed for a target demographic can collect large amounts of valuable data related to learners' strategic vocabulary learning, as well as individual differences information. Likert-scale design in such an instrument asks participants to respond on a scale ('very true of me' to 'very untrue of me') to statements regarding their VLS use. These responses provide self-report information regarding what learners believe they do when it comes to vocabulary learning. Although this information does not provide an objective illustration of the strategic behaviors that a learner performs during vocabulary learning, it can be used to build a picture of these behaviors using the learner themself as a lens. As LLS and VLS are defined as selected and conscious actions performed by learners to achieve certain language learning goals, we must assume that learners have learned, been exposed, or have previously

used strategies to be aware of them, and to ultimately use them. That said, positive response indicates that a learner has had previous exposure to a strategy, is familiar with its use, and uses it to a certain extent. Negative response indicates that a learner *may or may* not have previous knowledge of a strategy, but that they certainly prefer not to use it for whatever reason. This information can be used to help guide strategy instruction to help 'fill in the gaps' of learners' strategic toolbelts, and to help differentiate strategy use instruction for practitioners of language teaching within specific contexts.

The adult, Swedish L2 learning context, however, does not have an instrument designed explicitly within and for said context that is intended to perform large-scale data collection, and/or to be used as a learning and teaching tool. Most reporting on questionnaire development in vocabulary learning strategy research is vague, if reported on at all. Other questionnaires are adapted from instruments designed and intended for contexts (i.e. LLS not VLS) or audiences that do not coincide with those originally targeted for distribution. Such issues of misappropriation complicate the validity and reliability of those instruments being used for intentions different than those originally intended. A transparently reported, data-driven, ground-up approach to instrument design, built within and for a specific context, can provide a methodological basis for the development of a valid instrument that reliably collects data that that it is intended to collect. The chosen methodology for the creation of the SVLSS represents a synthesis of several approaches, but notably, uses a data-driven, ground-up approach that is intended to inform item pool generation. This approach echoes the ground-up questionnaire creation and construct analysis used by Stoffer (1995), but using a greater focus on following-up on perceived validity and reliability issues through iterative revisions. Reporting on this methodology in this project (section 3.5) is intended to function to both establish instrumentation transparency, and for the new instrument to maintain a close relationship to the intended demographic studied.

Following the motivations discussed in the previous section for performing research in the stated areas, and in conjunction with assumptions stated here, a series of objectives and ensuing research questions are posed in the following section.

1.3.2 Objectives and Research Questions

Synthesizing the central purposes motivating this project, the overarching objectives of this project are proposed:

- To design a questionnaire instrument that is built with data collected from the target demographic and intended for use with the target demographic.
- To review other relevant questionnaire instruments in the field of vocabulary learning strategy research in order to situate the new instrument alongside similar designs.
- To evaluate that questionnaire instrument with transparent methodology in terms of its accessibility, item list, and interpretation of underlying constructs.
- To propose a vocabulary learning strategy taxonomy that provides adequate coverage of strategy types relevant to the target demographic, and that is considered reliable in the light of other taxonomies. Then, to use this new taxonomy to refine the questionnaire instrument.
- To examine the individual differences of the target demographic that can help inform understanding of their vocabulary learning process and experience.
- To collect and interpret vocabulary learning strategy use data from the target demographic using the new questionnaire instrument in an attempt to establish preliminary strategy use patterns as related to the target demographic.
- To provide a transparent account of included content and evaluations of the new questionnaire instrument, and to suggest guidelines for distribution and interpretation of data collected by it to researchers and teachers in Swedish second language contexts.

The following research questions are asked with the above objectives in mind:

1. **What vocabulary learning strategies do adult, beginner learners of Swedish as a second language report using?**
    i. What kinds of strategy categories are used by these learners?
    ii. Can these results be used to design a questionnaire instrument intended to collect large-scale, quantitative strategy use data?

2. **What do adult, beginner learners of Swedish as a second language believe it means to 'know a word'?**
    i. Does an investigation into these individual differences contribute to better understanding adult, beginner Swedish L2 learners as students of Swedish vocabulary?

3. **What patterns, if any, exist in the reported use of vocabulary learning strategies by adult, beginner learners of Swedish as a second language?**
    i. According to …
        a. Demographic groups (age, time spent learning, multilingualism, proficiency)?
        b. Strategy categories?

The above aims and research questions are addressed through the use of six studies performed over three phases of research. Phase one concerns the initial design, evaluation, and instrumentation processes for a new context-driven data collection instrument, the SVLSS. It includes article I, article II and article III, and largely seeks to address research question one. Phase two involves gathering demographic and individual differences information regarding adult Swedish L2 vocabulary learners in Sweden in order to both support instrument construction, and to build a qualitative data base within which to ground quantitative questionnaire data gathered from the SVLSS. This phase includes article IV and report I and is largely aimed at addressing research question two. Phase three seeks to collect reported VLS use data using the SVLSS and to analyze and interpret said data to investigate the possibility of vocabulary learning patterns that may exist for the demographic. Report I represents the majority of phase three, and findings therein seek to address research question three.

Table 1: *Studies in Project.*

Ref.	Title
Article I	LaBontee, R. (2016). Investigating Reported Vocabulary Learning Strategy Use in Swedish Second Language Learning: From Interviews to Questionnaires. *Journal of Foreign Language Teaching and Applied Linguistics, 3(3), 131-140.*
Article II	LaBontee, R. (2018). *Questionnaire Instrumentation for Strategic Vocabulary Learning in the Swedish as a Second Language Learning Context.* Manuscript submitted for publication.
Article III	LaBontee, R. (2017). *Comparing Vocabulary Learning Strategy Lists: Design, Context and Content.* Manuscript submitted for publication.
Article IV	LaBontee, R. (in press). What does it mean to know a word? Beliefs from Adult Swedish Second Language Learners. *Nordand: nordisk tidsskrift for andrespråksforskning.*
Report I	LaBontee, R. (2018) *Vocabulary Learning Strategy Use in the Swedish Second Language Learning Context*. Unpublished Manuscript.

As all studies are considered to be integrative and successive components of a larger research project, findings resulting from each study will be synthesized in order to discuss data collection, instrumentation, underlying theory, and pedagogical implications related to VLS use and instruction by and for adult, Swedish L2 learners (see section 4.6). The research schedule in the section below describes the chronology and intentions behind steps taken to address the above research questions.

1.3.3 Schedule of Research Performed

In fall of 2015, interviews were held with SAS students at a university in Sweden. The semi-structured interviews involved a discussion about strategic learning approaches that these students use for word learning in the classroom, outside the classroom, and in everyday life. They also included a vocabulary learning task that learners performed while thinking aloud. The resultant analysis of collected data revealed a VLS list and preliminary taxonomy suitable to explain the kinds of strategies that adult beginner SAS learners report using (see methodology section 3.5.2, and results section 4.1). These findings were used to populate the item pool for the SVLSS 1.0 (article I).

In spring 2016, the SVLSS 1.0 was piloted twice with small groups of adult beginner SAS students from several universities in Sweden, using item-by-item discussion, and informal post-questionnaire interviews. The two rounds of pilot studies revealed some issues with wording and readability for the SVLSS 1.0. The SVLSS item list and organizational structure was adjusted according to these findings to an updated version (1.2)

For about 4 months between fall of 2016 and spring of 2017, the SVLSS 1.2 was distributed digitally to over 20 SAS programs active in institutes of higher learning in Sweden. This round of data collection was intended to explore validity and underlying constructs of the SVLSS instrument. A six-category VLS taxonomy was adopted following guidance from a factor analysis, prompting revisions to the SVLSS item list and conceptual structure (article II).

A supplementary question was paired with the SVLSS 1.2 during distribution asking, "What do you think it means to know a word? What is important to 'know a word'?" The qualitative, text-based answers to this question were analyzed using a content-analysis method that revealed a perspective on adult, beginner SAS learners' beliefs on what the most important features of word knowledge entail (article IV).

A comparative analysis of other VLS questionnaire instruments and their related taxonomical models was performed in order to situate the SVLSS and its preliminary VLS taxonomy within the intended context (article III). Com-

parisons revealed differences (and similarities) between VLS representation offered by various instruments, as well as a new avenue of theoretical grounding for VLS classification. This prompted the adoption of a modified four-category VLS taxonomy for the SVLSS instrument. Revisions were again made to SVLSS item list and organizational structure, resulting in the SVLSS 2.0.

For another 4 months between fall of 2017 and spring of 2018, the SVLSS 2.0 was distributed to over 20 SAS programs active in institutes of higher learning in Sweden. This round of data collection was intended to establish a baseline illustration of strategic vocabulary learning approaches used by adult beginner SAS learners in Sweden. Analysis of this data was performed to investigate possible VLS use patterns connected to certain demographic factors (report I), and to suggest possible applications of findings and the SVLSS instrument to pedagogical contexts in Swedish L2 learning and teaching.

2. Theoretical and Research Background

In this section, the underlying paradigms that guide and govern studies in SLA, vocabulary acquisition, and strategic vocabulary learning are presented. Connections between SLA, vocabulary acquisition and strategic vocabulary learning, and how they integrate in this project are made where appropriate. A literature review is presented including surveys of research concerning individual differences in language learning, learner beliefs in language learning, language learning strategies, vocabulary learning and acquisition, and strategic vocabulary learning. This section closes with an overview of research performed regarding strategic vocabulary learning in Swedish L2 learning contexts.

2.1 Underlying Theoretical Considerations

2.1.1 Cognition and Language

The cognitive sciences have had a significant impact on the conceptualization of language from the perspective of second language acquisition (SLA) research, and the way that applied linguistics research has been performed. As simply stated by Robinson and Ellis (2008), "They are mutually inextricable. Cognition and language create each other" (p. 3). However, modern studies in SLA and applied linguistics sometimes take theoretical precepts established inside the cognitive sciences as given without attending to a discussion of the cognitive nature of the language or learners being investigated. In this section, some of the more relevant theories and frameworks that have their roots in

cognitive sciences, and now cognitive linguistics, will be discussed in relation to SLA in order to lay foundations for a discuss regarding the relationship between attention and vocabulary learning later on. In order to breach introductions into these concepts, learning, dual-coding, tracing, levels-of-processing, language acquisition will be briefly touched upon.

Cognitive theory has traditionally separated memory into two stages: *short-term* and *long-term* memory. Short-term memory systems have a limited capacity for holding and processing information and are where information must be accepted from in order to pass on to long-term storage. The short-term memory is made functional through a central executive component that directs a limited amount of attention to phonological and visual input. To learn something, say linguistic information, memory must be activated and transferred from short- to long-term memory modules. This can be enacted through *meaningful learning*, or, "a clearly articulated and precisely differentiated conscious experience that emerges when potentially meaningful signs, symbols, concepts, or propositions are related to and incorporated within a given individual's cognitive structure" (Ausubel 1967:10). When considering learning theory in terms of that 'cognitive structure', it is prudent to consider: (i) how that knowledge is developed, (ii) how knowledge transfers into automatic or proceduralized knowledge, and (iii) how new knowledge is integrated into the learner's existing cognitive system.

Essentially, cognitive learning theory considers linguistic knowledge and acquisition to be guided by the same systemic principles as other processes of learning, but are likely to be more complex (Ellis 1995) in nature due to language's inextricable marriage to schematic conceptualizations of our world. Cognitive linguistics also accepts that one cannot learn or develop language without the building of patterned structure from a complex series of networks in the embodied mind. The categorization and generalization of patterns encountered from experiences and input become organized in thought as 'schemata' which provide either abstract or concrete frameworks for understanding encountered information (Anderson 1978). As such, language is used to form these conceptual structures, and in turn, these patterns drive the development of language for the individual. Linguistic knowledge can be considered as developed via figurative associations of verbal information with mental images which can facilitate recall of that knowledge, also known as Dual-coding theory (Clark & Paivio 1991). If linguistic items (words, phrases, sounds, etc.) are encountered repeatedly, trace theory suggests that those items are further entrenched in long-term memory storage and become more likely recalled and recognized in the future (Baddeley 1990).

When linguistic information is processed via associations (dual-coding) or repetition (trace), that information can be considered to be more likely to

be committed to long-term memory when elaborated upon in effortful, actively performed, complex mental operations (deep processing) with regards to lexical information, either semantic or structural, in what is known as levels-of-processing theory (Cohen, Eysenck, & LeVoi 1986). Alternatively, if shallow mental operations, such as simple phonetic or visual rehearsal, are enacted, memories may be maintained, but will not encourage storage of deeper, elaborative lexical information. Considering these theories, a complex, dynamic system begins to emerge to explain the development, proceduralization and integration of knowledge within one's cognition.

2.1.2 Attention and Language

An early, but highly influential view of attention's role in SLA was formed by Krashen's (1981) hypotheses surrounding conscious learning and language development. He proposed that *learning* was an active, conscious act performed specifically to bridge gaps in one's linguistic knowledge, but comparatively limited in usefulness when compared to *acquisition*, what he described as a happening subconsciously through 'natural communication'. His implication being that conscious learning strategies play a small role in language development processing compared to what learners simply learn naturally through so-called unconscious language use.

However, Krashen's view of language acquisition has been challenged from a cognitive learning standpoint. In the 90's, Norbert Schmidt (1990) introduced and Peter Robinson (1995) refined the concept of the 'noticing hypothesis' used to describe conscious L2 learning. The noticing hypothesis claims that attention, on the levels of awareness and 'noticing' linguistic input, is necessary for any acquisition of second language to transpire. Robinson offered a model that describes the relationship between attention, awareness and detection, where he defines detection as 'noticing' (i.e. perception and encoding of L2 input) in order to provide support for Schmidt's noticing hypothesis. Robinson explains noticing as "…detection plus rehearsal in short-term memory, prior to encoding in long-term memory" (p. 296) and that activation of input within that short-term memory, via attention, must reach a threshold before achieving 'awareness' status, where encoding can begin to occur. Rehearsal would then become a subsequent result of repeated invocation of input in one's awareness, and can act as the processor to transfer activated information from the short-term to long-term memory (Baddeley 1986). According to this language processing model, non-attended information does not influence the encoding process for developing L2 knowledge, supporting the noticing hypothesis for L2 learning. He does warn, however, that awareness

and attention are difficult to measure due to fleetingness of conscious recall, and the inability for participants to verbalize the nature of one's awareness (Robinson 1995:299).

In order to better approach the concept of attention in SLA research, efforts have been made to pin down the nature of these terms. Schmidt (2001), in his chapter concerning the interrelation of cognition, attention and SLA, notes six traditional core aspects of attention that provide a basis for understanding its many facets. He summarizes that attention is: limited, selective, subject to voluntary control, controlling access to consciousness, essential for the control of action, and essential for learning. In terms of attention limitations, we humans have varied, limited capacities for attending to input (e.g. words, rules, pictures, speech) (VanPatten 1994), and must therefore attend to such input in a strategically selective fashion. In an SLA context, this means attention will appropriate cost-benefit analyses on input elements that include message meaning in the form of lexicon, and other components of language. The selective nature of attention can be voluntarily controlled, responding to either outside events or inner intentions of the individual. For example, students can focus attention on the material being taught in class either influenced by didactic methods used by the instructor, or influenced by the students' own various motivations or learning styles.

Awareness, a subjective feeling that refers to one's consciousness, is considered in SLA circles as the result of interaction between the control of attention and the analysis of input (Bialystok 1994), or in cognitive linguistics, attentional selection acts as a staging 'frame' on say, lexical information, for access to the awareness (Talmy 2000). Awareness operates as an essential component of explicit learning in SLA as it influences control of attention and analysis, achieving deeper processing for knowledge storage in the memory. This runs parallel to the understanding that attention can also be involuntary, or 'preconscious', reacting to and registering input that we do not consciously wish to attend to, such as a loud noise or sudden bright light.

As a topic for both researchers and practitioners in SLA, it appears now that "the concept of attention is necessary in order to understand virtually every aspect of second language acquisition, including […] learning strategies in L2 learning […]" (Schmidt 2001:3). Attention, in all of its complexity, is necessary to process linguistic input for deeper mental processing (Leow 2000; Robinson 1995; Schmidt 1995). This notion is central to supporting explicit L2 instruction with regards to various facets of vocabulary knowledge (Ellis 2001; Long 2000; Nassaji & Fotos 2004), and for both conceptualizing and training strategic language learning (see section 2.2.2.2.7 and 2.2.3.3.6).

2.1.3 Socio-Cultural Theory and Language

Viewing language learning through a socio-cultural frame provides researchers with a granular focus on the human experience of their meditation and interaction with their surrounding linguistic environment, but with explicit focus given to contextual factors – static and dynamic, physical and symbolic – and their influence therein. The project at hand is not formulated specifically in Sociocultural Theory (SCT), but the framework it provides relates to 'extra-linguistic' factors involved in the language learning processes investigated, such as motivation, context, and individual differences between learners. The wide-angle frameworks of SCT can be applied quite appropriately to research contexts in SLA that deal with learner thinking and learner approaches to language acquisition. L2 vocabulary learning, one such area of interest, seeks to better understand the influences on learners when acquiring vocabulary knowledge in a non-native language.

Sociological ideologies help to frame human behavior as occurring through mediated interactions between the mind (as situated in a body) and its surrounding environments. This interaction is mediated by actual, symbolic, and psychological tools, or 'artifacts', that are created, given value, and modified by human cultures (Lantolf 2000). In order to examine these artifacts, abstractions of their form and function must be addressed in order to facilitate measurement or analysis. On a communicative, dialogic level, perhaps the most readily available unit of analysis, as offered by Vygotsky, is 'the word', a manifestation of systemic and semantic thought used as a symbol to carry meaning from human to human (Bakhurt 1991).

Words, as other features of language, are considered used by humans to achieve a variety of actions in a social sphere. Vygotsky's action theory (as described in Bakhurt 1991) conceives of three levels of activity in which human behavior is explained as integrating socially and culturally constructed forms of mediation that are goal directed and carried out under particular spatial and temporal conditions. The three levels indicate motivation to perform an action, the action itself, and the conditions set in which that action occurs. In other words, SCT framing infers that thinking (pre-action) and speaking (action) are *not* the same thing, though are tightly interrelated in a dialectic unity (Lantolf 2000:7). Human psychological processes, such as grammatical systems of language, do not preexist in the human mind waiting to emerge at the appropriate moment of maturation (cf. Chomsky's, 1965 universal grammar theory). Instead, they are products of environment, previous experience, usage, communication, and a complex system of affective factors (e.g. Tomasello 2003). However, this view is perhaps an oversimplification of the processes involved in grammatical systems of vocabulary, since SCT focuses more on the rela-

tionship between an interlocutor and their environment, their available linguistic resources, and the interaction of these variables. In this sense, a cognitive perspective of language learning can be used to examine the complexity of vocabulary learning on a somewhat 'micro' psychological level (e.g. see sections 2.1.1 and 2.1.2), while SCT can be drawn upon to express the influence of contextuality in meaningful ways (Ellis 2010).

Languages are inherently fundamental components of most cultures, both affected by and affecting sociocultural conventions, on geographical and ideological levels. When it comes to protecting this formative balance for world languages, the maintenance of language diversity and stability is of utmost concern to the sociopolitical language rights and survival viewpoint (Freeland & Patrick 2004). Though the themes that come forth from language rights discourse can appear large-scale (e.g. nation-state politics of language use, language ecology and death, globalization and economic impact on language users, etc.), sociopolitical linguistic considerations largely occur on local, contextual levels that bear value for research, especially considering, for example, adult L2 learners (i.e. migrants) who struggle to learn a language in a new location for any variety of reasons. The environmental influence on that learner as a minority (or majority) speaker of other native language(s), and their engagement with the linguistic politics of their surroundings (both physically and ideologically, again) should be considered when investigating an individual or group's learning experience (e.g. the many perspectives shown in Hyltenstam & Milani 2012).

2.1.4 Adult L2 Learning

Adults' language learning experience differs from the experience of younger learners due to a variety of factors. These factors have influence over learners' language acquisition processes, and include but are not limited to their ultimate level of attainment in L2 acquisition, rate of learning, and amounts of time required for learning (Munoz 2008). The ultimate level of attainment refers to a sort of theorized 'proficiency cap' that has been observed in language learners with regards to their fluency, and how close they can come to approaching 'nativelike' proficiency in a given TL. The rate of learning can be measured through a variety of linguistic evaluations that span language knowledge competences such as comprehension, vocabulary acquisition, spoken fluency, written/oral accuracy, and so on. The dividing line between 'younger' and 'older' learners has been hotly debated since the formulation of the Critical Period Hypothesis (CPH) offered by Lenneberg (1967). The CPH posits that learners' rate and attainment of language learning becomes deficient after a

certain age boundary, and thus a period of 'peak sensitivity' is theorized to exist nearly from birth to pre-puberty age (Singleton 2005).

Attempts to substantiate the CPH have been partly addressed by research performed with the aim of cataloguing post-pubescent age of learning onset (AO) learners' non-nativelike proficiency attainment in L2 learning (e.g. Bialystok & Hakuta 1999, DeKeyser 2000). Further confirmation of age as a L2 learning factor has focused on a parallel but opposite group of learners – those whose AO was post-pubescent, however, displayed nativelike proficiency in their L2. This work has revealed that although these learners exhibit nativelike proficiency with nearly indistinguishable performance with regards to grammaticality judgement (Birdsong 1992) and pronunciation (Bongaerts 1999), small differences could be observed in some cases with regards to some pronunciation features related to production, and grammatical intuition (Ioup, Boustagui, El Tigi, & Moselle 1994). The CPH has been criticized as characterizing maturational constraints on L2 learning as existing on abrupt onsets and offsets of a critical period for beginning learning, which does not fit SLA frames that see learning as more gradual and individually flexible (see Hyltenstam & Abrahamsson, 2003 for an extended argument).

The most distinctive differences between older and younger L2 learners was observed in the work of Krashen, Long and Scarcella (1979), where older learners made more rapid progress in the early stages of L2 acquisition as compared to younger children. They observed that the younger a L2 learner starts learning the L2, the more likely they will be to attain nativelike command of the language. Research dedicated to evaluating the assumptions made by Krashen et al. have shown some degree of confirmation when comparing learners' age of learning start when their amounts of exposure to the TL are significantly similar. For example, comparisons of learners' rate of learning between older (18+) and younger (8-14) L2/L3 students have shown nearly linear superiority of older learners to younger learners (Muñoz 2006), most likely linked to cognitive maturity, evidenced by reduced differences between more adjacent age groups (i.e. 16-17 vs. 17-18). Similar findings pointing towards learning success for older learners were seen between later and earlier starters (referring to AO) in terms of fluency measures (Mora 2006), morphosyntactic and discourse measures (Álvarez 2006), and oral/written production tasks (Miralpeix 2006) (reported in Munoz 2008). It should be noted, however, that younger learners seem better suited than earlier learners when it comes to certain areas of SLA, for example, pronunciation and early development morpho-syntactic decision-making (Long 1990).

Younger learners are generally viewed as possessing better prospects for achieving levels of language proficiency closer to 'ultimate achievement' (i.e. nativelike language use across all skills) than older learners (Abrahamsson

& Hyltenstam 2009). Essentially, it seems that cognitive processing, and therefore facets related to learning, have been observed to 'slow' with increasing age. Three principal components of cognitive aging have been observed (Park 2000): decreases in processing speed, deficits in working memory, and decreases in the ability to focus attention on relevant material that link to working memory. These components, as measurements of cognitive processing, are all integrative to the language learning experience, and should influence language acquisition on an individual difference level. The effects of cognitive aging are also more likely to be present in L2 use over L1 use due to relatively lower degrees of automaticity in L2 use for learners (Segalowitz & Hulstijn 2005), and are seen to decline starting in early adulthood (age 20) and continue linearly throughout the adult life span (Bäckman & Farde, 2005, reported in Birdsong 2006). However, on a meta-cognitive level, adult learners possess an advantage over younger learners in that they are more suited to draw upon previous learning experiences and apply them to learning practices, and reflectively assess their own learning processes to iteratively improve effectiveness.

Although older learners seem to have advantages over younger learners in general abilities related to their rate of learning, and have been shown repeatedly to be able to approach nativelike proficiency with the L2, some cognitive differences exist between the age groups, and some specific linguistic features may be more difficult (or easier) to acquire for adult learners of languages. Such considerations are likely to impact the strategic learning practices of adult versus youth language learning, as will be a subject of inquiry in this project. See sections 2.2.2.2.3 and 2.2.3.3.5 on how age affects strategic learning, and section 4.5 and 4.6 for results from this project regarding adult learning.

2.1.5 L2 Word Knowledge

Words, on their face value, are the building blocks of any language. They are used by the language user as semantic symbols (refined with syntactical, grammatical, morphological features, etc.) that are used to negotiate and communicate ideas to others (Wertsch 1985). Words are often the first and most salient objects learnt by many language learners in their quest for language acquisition, but their acquisition also represents a major challenge for learners in that they must learn many words very quickly to experience language learning success (Oxford 2017). As intoned by Hunt and Beglar (2005), "the heart of language comprehension and use is the lexicon" (p. 2).

Richards (1976) tackled 'what it means to know a word' within a framework centered on classifying word knowledge in order to support classroom lan-

guage and vocabulary instruction. His central assumptions of what word knowledge *is* as it relates to language learners includes (but was not limited to) (i) knowing the probability of encountering that word (or associated words) in speech or print, (ii) the limitations imposed on a use of the word according to function and situation, (iii) the syntactic behavior associated with a word, (iv) the underlying form(s) of a word, (v) the network of associations between the word and other words, (vi) the semantic value of a word, and (vii) the various meanings associated with a word.

In an attempt to update conceptions of vocabulary knowledge as connected to measurement, Meara (1997) abandoned the classification of word knowledge features for individual words, instead suggesting three dimensions to categorize learners' lexical competence: vocabulary size (breadth), automaticity of lexicon access (fluency), and the associative network structure of the lexicon (depth). In parallel work that favored facilitating vocabulary knowledge measurement, Wesche and Paribakht (1996) developed a five-point vocabulary knowledge scale used to measure to what extent learners recognize (and therefore have experience with or knowledge of) lists of individual words. Though useful as a tool for capturing initial illustrations of word knowledge possessed by learners, such measurement instruments do not offer detailed insight into the scope of what is involved in 'learning' the words that learners know. What is more, situating word knowledge on a progressive continuum from 'not known' to 'known' overlooks the non-linear complexity of lexical knowledge development across multiple, dynamic integrative systems.

Henriksen (1999) presents a more holistic model of lexical knowledge that occurring on three non-binary, mutually interactive dimensions; partial-to-precise knowledge, depth of knowledge, and receptive-to-productive use ability. Partial-to-precise knowledge encapsulates a non-ordinal continuum referring to various registers of use for a lexical item, comprehension of that item, associations to that items, and forms that may be available to a language user, which contribute movement from a partial-to-more-precise lexical entry for that item. For example, knowledge in this dimension might include knowing when it is 'appropriate' to use (or to recognize) a certain word (and which word sense is intended) in a certain context, how the word is spelled or pronounced, and so on. Depth of knowledge refers to more constructional knowledge of vocabulary. This encompasses knowledge of the extent in which singular or stringed lexical units are linked in the lexicon via cognitive networks. For example, through mapping of schematic domains (e.g. MOTION, MOVEMENT) onto verbs or verb groups (e.g. 'move', 'go'). Depth accounts for knowledge regarding a word's morphological, syntactic, and collocational profile, and it's meaning potential (Beheydt 1987). The receptive-productive dimension assumes that lexical knowledge commonly moves along a con-

tinuum beginning with receptive (e.g. recognition/comprehension), and gradually progressing to productive (e.g. spontaneous use).

The receptive-productive dimension has been used in vocabulary acquisition research to describe how language learners actually use lexical knowledge. Though somewhat reductive of the complexity of the diverse features that make up one's word knowledge network, distinctions drawn between receptive and productive knowledge are helpful to further categorize and discuss the ways in which we are able to command language. Traditionally, receptive knowledge has been linked to the skills of listening and reading, both forms of receiving language input and our interpretation of it. Productive knowledge is enacted through writing and speaking skills, utilizing recall and construction of word knowledge to convey messages (Nation 2013). Schmitt (2010) describes receptive lexical knowledge as representing the recognition and recall of *meaning*, while productive knowledge reflecting recognition and recall of *form* and the entrenchment of constructional schema during productive processes. However, receptive-productive knowledge should not be assumed as binary dimensions, rather, occurring along continua as production cannot occur without the manifestation of phonetic/textual items, and reception cannot occur without evoking semantic/referential/constructional associations connected to input form.

Conceptualizing receptive and productive knowledge as dichotomous, however, becomes problematic due to inconsistency in measurement of the degree in which individuals command knowledge in the two dimensions (Teichroew 1982). What's more, receptive lexical knowledge seems to include productive lexical knowledge in the form of partly known words, non-readily available low-frequency words, and avoided words (Corson 1995). Though in spite of these criticisms, the importance of the productive-receptive distinction for learning and communicative practice purposes is hard to ignore. Productive learning, for example, can require more effort for language learners than receptive learning when discrepancies in *form* or constructional schema (more rarely for *meaning*) between the L1 and L2 occur, requiring learners to spend extra effort learning new spoken/written output patterns for successful communication (Ellis & Beaton 1993). Language background and other individual differences shared by language learners can therefore play a pivotal role in their acquisition and use of word knowledge when learning a new language.

Nation (2013), a proponent of the receptive-productive lexical knowledge distinction, constructed a taxonomy for word knowledge that explains how each knowledge category can be conceived of receptively and productively. His model partitioned vocabulary learning into three categories organizing word knowledge features into, form, meaning, and use.

Table 2: *Nation's Word Knowledge Taxonomy (2013:49).*

		Receptive	Productive
FORM	**Spoken**	What does the word sound like?	How is the word pronounced?
	Written	What does the word look like?	How is the word written and spelled?
	Word Parts	What parts are recognizable in this word?	What word parts are needed to express the meaning?
MEANING	**Form and meaning**	What meaning does this word form signal?	What word form can be used to express this meaning?
	Concepts and Referents	What is included in the concept?	What items can the concept refer to?
	Associations	What other words does this make us think of?	What other words could we use instead of this one?
USE	**Grammatical Functions**	In what patterns does the word occur?	In what patterns must we use this word?
	Collocations	What words or types of words occur with this one?	What words or types of words must we use with this one?
	Constraints on use	Where, when, and how often would we expect to meet this word?	Where, when and how often can we use this word?

Word knowledge involving *Form* includes aspects of the spoken word, the written form, and the parts of words. Spoken knowledge encompasses recognition of heard words, and production of the spoken form including pronunciation, stress, and tone. Written knowledge includes recognition and production of text, characterized by knowledge of spelling, which is linked to phonological knowledge (Bradley & Huxford 1994). Word part knowledge, also interconnected to spoken and written knowledge, involves knowing affixes and stems, and the way they are used to build word patterns in the target language.

Meaning in lexical knowledge is characterized through connected form and meaning, concept and referents, and associations. Form and meaning connections reflect the marriage, in production and recognition, of the form of a word and what meaning it signals (Nation 2013:73). The concept and referent subclass encapsulates semantic relationships mapped onto words in the form of various meaning-senses of words and word strings. This includes their homonyms, homographs, and homophones (Nation 2013:76), their inherent lexical meaning, and other inferred meanings garnered from the context surrounding those lexical items (Ruhl 1989). Association knowledge includes classifications of semantic relationships between words, such as synonymy, antonymy, hypo-/

hypernymy, mero-/holonymy, and troponymy (Miller & Fellbaum 1991). As these concepts can quite easily overlap and interrelate, Nation (2013:82) takes care to note that knowing a core semantic concept that a word represents and how it is realized in various contexts should be categorized in concept and referent knowledge, whereas referring to an association between a new word and a definition or a context is form-meaning connection knowledge.

Lexical knowledge of *Use* includes the pragmatically oriented understanding of grammatical functions, collocation, and constraints on use of words. Knowledge of grammatical functions reflects the part of speech of words (and how they operate in the target language), and what grammatical patterns a lexical item can fit into appropriately. Collocational knowledge, in which collocations are collections of words that conventionally occur with or nearby each other in a given language, represents an awareness of patterns of multi-word units that are used to increase fluency and lighten the cognitive load of creating and understanding language output and input (Pawley & Syder 1983). Knowledge of constraints on *Use* for vocabulary involves the pragmatic awareness and practice of factors which limit when and where certain words can be used, according to frequency of use, register, context, and sociocultural acceptance (Nation 2013).

These categories, like Henriksen's dimensions of lexical development, are inter-related and influence each other, which Nation (2013:66) uses Levelt's (1989) speech production model to illustrate. Levelt's model provided insight in better understanding how lexical knowledge (lexicon, grammar, phonology, etc.) is *used* by the language user. As summarized in Nation (2013), a spoken message begins in the "conceptualizer module" of the language learner's mind, producing a preverbal message of information to convey (p. 63). This information is then formulated through accessing the information's corresponding lemma and meaning components, and grammatical features. Meaning and grammar are linked to morphological and phonological features of the word, and appropriate forms chosen with meaning/grammatical encodings. Phonological features are produced to match morphological forms of a word, and finally, the 'articulator module' produces the word.

Levelt's model was adapted by de Bot, Paribakht, and Wesche (1997) in order to describe a lexical-level model for L2 vocabulary processing as it relates to knowledge movement from receptive-to-productive for speech and writing. Their model was built to better represent how "word knowledge can be acquired from contextualized language input, such as in a reading task" (p. 315), and maintains Levelt's three levels of lexical knowledge - concepts, lemmas and lexemes - as being involved in the decoding process for speech/written L2 input (comprehension) and encoding process for speech/written L2 output (production).

This section has served as a survey of models that are relevant to the understanding of how definitions of word knowledge in the L2 context can be organized and applied to the measurement or analysis of what is involved in language learners' vocabulary knowledge. However, the project at hand does not engage in the measurement of vocabulary knowledge per se, and therefore is not anchored in any particular way to any vocabulary knowledge *measurement* systems.

Instead, this research project requires a base understanding of what discrete vocabulary knowledge features are involved in learning to 'know words' in order to accurately model and conceptualize strategic vocabulary learning associated with those knowledges. Nation's (2013) *form, meaning,* and *use* model is designed for accessibility by both pedagogical and research contexts, and is also the basis upon which Nation builds his VLS taxonomy (see section 2.2.3.2), a model adopted by this project for theoretically anchoring strategic vocabulary learning. As such, Nation's vocabulary knowledge model is adopted by this project as a primary means of organizing instrumentation and data collection and interpreting findings related to L2 vocabulary knowledge, although features from other models (e.g. the concept of vocabulary depth) appear in interpretation and discussion of findings where appropriate (for example, in situating the SVLSS 1.2 and 2.0 VLS taxonomies described in sections 3.5.2.3, 4.2, and 4.3, and in articles II, III and report I). For more on how Nation's model is applied to this project, see section 3.5 on instrumentation methods and the findings from studies performed in section 4.0.

2.2 Literature Review

2.2.1 Individual Differences in SLA

The individual differences of language learners are, put simply, the identifying features that differentiate individuals or groups of learners from one another. Traditionally, individual differences research in SLA has focused on the influence that learners' language aptitude, motivations, cognitive styles, and strategic choices have on their language learning experience (Skehan 1989). Benson and Gao (2008) divide individual differences into two separate dimensions: innate attributes that are inherent to learners' identities that do not readily shift with dynamic contextual factors (i.e. age, gender, aptitude) and 'acquired attributes' of learners that are subject to and affected by contextual, momentary and environmental influence (i.e. motivations for learning, learning beliefs, attitude). This section will explore definitions and

studies regarding the 'acquired attribute' domain of individual differences as perceived and used in SLA research. Other socio-cultural, contextual and demographic factors (i.e. age, gender, language proficiency) will be addressed specifically in connection to LLS (see section 2.2.2.2) and VLS (see section 2.2.3.3).

2.2.1.1 Motivation

Learners' motivations for learning a language or engaging in any specific type of language learning are important features that differentiate learners from each other in their learning processes. Motivation as well as the identity of a learner and their relationship to autonomous learning have become increasingly linked (Murray, Gao & Lamb 2011) and help us to better understand the learner as an individual rather than simply a data point. Motivation has been described as,

> "…the dynamically changing cumulative arousal in a person that initiates, directs, coordinates, amplifies, terminates, and evaluates the cognitive and motor processes whereby initial wishes and desires are selected, prioritized, operationalized and (successfully or unsuccessfully) acted out" (Dörnyei & Otto 1998:65).

Self-motivation within L2 learning has been modeled on the learner's drive to reduce their perceived discrepancies between their current L2 using (actual) self, and the potential future L2 using selves (Dörnyei 2005). This drive, operating within the central construct of learner identity, is the core of what provides motivation for language learning behaviors in learners (Papi & Teimouri 2014). Although language learning success and motivation are closely correlated and are linked to influencing language achievement (see Masgoret & Gardner, 2003 for an in-depth review of studies), motivation is a difficult construct to measure objectively. Conceptual fuzziness due to the individual nature of these constructs has resulted in great difficulty for establishing or confirming causal directions between learning success and motivation. This also leads to issues with pinning down motivation into specific contexts, as motivations linked to certain learning situations (e.g. L2 vocabulary) may be influenced by factors extending from a variety of 'outside' contexts (i.e. general interests, psychological status). That said, learners' motivations linked to language learning cannot be restricted in description to classroom behavior but must extend to outside-the-classroom learning behavior as well (Masgoret & Gardner 2003:497).

As an approach to recording and describing motivation in the L2 learning context, learners' preferences and attitudes towards language learning processes

have been explored with intentions to establish discrete motivational profiles. Csizér and Dörnyei (2005) collected mass data from English L2 learners in Hungary, interpreting data that probed motivational constructs. The data was interpreted as revealing four broad clusters of learners; unmotivated learners with little interest in foreign language, culture and language learning, highly motivated learners with successfully developed 'ideal L2 selves', and two groups with middling motivation that included a group focused more primarily on instrumentality as a motivating driver, and a group focused on L2 community and culture. Motivation will be revisited in connection with LLS and VLS in their respective sections, later in this chapter.

2.2.1.2 Learning Style

The learning style of a language learner is an "individual's natural, habitual, and preferred way of absorbing, processing and retaining new information and skills" (Kinsella 1995:171) that tend to be used throughout many realms of study, not being completely married to a single subject. SLA studies into learning styles have often been structured by the patterns, choices and approaches that learners take towards using language learning strategies (e.g. Carson & Longhini 2002; Ehrman & Oxford 1990; Rossi-Le 1995). For example, Willing (1994) used learner strategy preference data to derive four learning styles of language students: communicative learners who rely on spoken language strategies using native speakers, classmates, conversation, and television media, analytical learners who tend to study grammar and written text on their own, authority-oriented learners who prefer obtaining language information from the teacher and textbook, and concrete learners who rely on a variety of sources to substantiate new or learned language knowledge (reported in Wong & Nunan 2011:145).

The explicit connection between learning strategies and learning styles was further validated through the work of Li and Qin (2006) who used interview and questionnaire data collection methods to show significant correlations between learners' strategy choices and the learning styles that they subscribed to. Wong and Nunan (2011) studied university undergraduates studying EFL in Hong Kong, collecting data on their strategy preferences and patterns of language practice and use with the intention to explore differences between more and less effective learners. In relation to learning styles, the most effective learner groups included a majority of 'communicative' and 'analytical' learners, while less effective learners contained 'authority-oriented' and 'communicative' learners. However, the authors interpreted the greatest difference between effective and less effective learners as attitudinal, citing greater ac-

tivity, learning control, and autonomy for the effective learner group (p. 154). Their findings suggest that fostering reflective learning and encouraging autonomy can improve learning success, and more importantly, one's learning style (and connected learning attitudes) can critically influence the language learning process by increasing motivation and confidence for learning and resulting in a more well-rounded, self-sufficient learner.

The implications of these findings indicate that learners who are more autonomous, aware of their learning styles and approaches, and who do not need to rely on authoritative sources to engage in learning, are more likely be more successful L2 vocabulary learners.

2.2.1.3 Learning Beliefs

Beliefs, in an epistemological sense, have been described as, "what people do when they are prompted to reflect on the nature of what they regard as knowledge [with regard to] ideas about […] world knowledge" (Maggioni & Parkinson 2008:447). The beliefs that learners hold about their learning process act as filters through which they construe their learning experience (McGee 2012). General learning beliefs can be extended to specific areas of learning, and beliefs about those specific contexts (i.e. language and/or vocabulary learning) can be formed in parallel. Importantly, these beliefs influence learner behavior, motivations, strategic approaches to learning, and performance (Hofer 2001), situating them as integral components in the language learning process.

The beliefs that language learners hold, when positive to the learning experience, can influence that learning in subsequently positive ways. However, like motivation, beliefs are a difficult construct to pin down with regards to objective measurement, prompting obscurity in correlational directionality between learners' beliefs and their learning success. Nevertheless, research has suggested that a strong relationship exists between these constructs. Park (1995) surveyed Korean EFL learners' beliefs regarding English learning. Findings suggested that reportedly high confidence in their language learning and use as well as an increased intention to use English learned correlated to higher levels of language proficiency in learners, and greater successes in their use of English. Similarly, Mori and Shimizu (2007) observed American university students learning Japanese who indicated the belief that 'L2 learning is easy' were seen to display greater language learning improvement over a period of time.

The way that learners perceive vocabulary learning is linked to their beliefs concerning vocabulary learning, and thus can influence their learning process. In order to examine the kinds of influence that learning beliefs and motiva-

tions exert on the learning experience they have been linked to other individual difference factors often attended to in L2 acquisition, such as learning style and strategy use. Gu and Johnson (1996), investigating the vocabulary learning beliefs held and vocabulary learning strategies used by university-level Chinese EFL learners, found that their sample believed that vocabulary should be studied *and* used, learned in contexts, and should be memorized in order to be considered 'known'. These beliefs ran parallel to significantly more memorization strategy use by the same learners. A study by Li (2011) only focusing on vocabulary learning beliefs, seemed to confirm similar findings. They observed language learners who viewed vocabulary learning important, as consisting of a combination of knowledge and skill in use, inclusive of both words and phrases words are used in, must be explicitly studied to be 'known', and that the use of contexts as well as repetition are important for facilitating the learning process.

2.2.2 Language Learning Strategies

Learners employ a diverse variety of approaches and methods in the pursuit of becoming better language learners and users. Some of these behaviors can be described as *strategic*, planned and performed with the intention of accomplishing some kind of aim, or goal. The study of L2 language learning strategies (LLS) encompasses a field of research that has dedicated nearly 50 years of effort into categorizing, tracking, and evaluating the use of the strategies chosen, used, and reported by language learners, and the way that they are taught in classroom settings. This section will present theories, models and definitions of LLS used in SLA contexts before launching into survey of research findings regarding how LLS affect language learning and what factors affect LLS use. This section should be considered an anchoring base upon which a more detailed discussion of a specific field of LLS is discussed – vocabulary learning strategies – in section 2.2.3.

2.2.2.1 Theories, Models and Definition

Rubin (1975), in cataloguing the kinds of behaviors that 'good language learners', or successful and motivated learners who are characterized as the highest achievers in language classrooms, perform. This discussion centered on describing the LLS performed by these learners, which she defined as "techniques or devices which a learner may use to acquire knowledge" (p. 43). She found that good language learners typically were extroverts who managed their emotions and motivations well in the face of issues such as making mistakes.

From a cognitive perspective, O'Neil (1978) sought to classify learning strategies into three categorical types. They were divided into cognitive strategies for information-processing and schema development, metacognitive strategies that managed executive control of other strategies, and affective strategies that regulate motivation and emotions. O'Malley, Chamot and Walker (1987) further integrated cognitive theoretical grounding for describing and categorizing LLS according to what kind of knowledge they are used to develop. The types of knowledge in question were adapted from Anderson's (1983) information-processing model that divided general knowledge into 'declarative' (sometimes called explicit) and 'procedural' (sometimes called implicit) knowledge types. Declarative knowledge includes facts, definitions and rules that are consciously known and often can be verbalized, where procedural knowledge involves automatized skills or actions that have been stored in memory.

In presenting the 'Strategy Inventory for Language Learning' (SILL) questionnaire for assessing the frequency of learners' reported LLS use, Oxford (1990) described a six-category model of LLS classification. The model, underscoring elements of learner self-regulation and autonomy, presents LLS as divided into either direct (performed intentionally with goal of gaining language knowledge) or indirect (self-regulative, performed to govern overall learning and strategy choice) strategy groups. Direct strategies include memory, cognitive and compensation strategies, all of which are done intentionally to accomplish a linguistically-oriented goal, such as learning the meaning of a word or comprehending a passage of text. Indirect strategies involve metacognitive, social and affective strategies that concern regulation of learning and strategy use. These strategy categories and elements involved in their use can be seen in table 3.

O'Malley and Chamot (1990) meanwhile attended to a continued application of cognitive information-processing theory to define LLS in order to emphasize the distinct roles that cognitive and metacognitive strategy use play. O'Malley and Chamot also provided a comprehensive chapter in their book concerning data collection methods for LLS research, and the various applications of data on LLS research.

Table 3: *LLS Taxonomy (Oxford 1990).*

	Types of Strategy	Elements involved	Example
Direct Strategies	Cognitive	Repetition/Practice Analyzing Reasoning Structuring	Using Flashcards to learn English translations of Swedish words
	Memory	Mental Links Image/Sound Reviewing Action	Using keyword technique to associate 'Smör' + 'Smear', to help remember 'Butter' as a translation.
	Compensation	Informed Guessing Overcoming limitations	Skipping unknown words and concentrating on overall meaning of a text.
Indirect Strategies	Metacognitive	Planning Learning Evaluating Learning	Making a schedule for studying vocabulary over a week.
	Social	Asking Questions Cooperating Empathizing with Others	Asking the teacher how to pronounce a new word in the target language.
	Affective	Control of Emotion Anxiety Motivation	Rewarding self with candy after learning a new word list

Unsatisfied with the classification methods above, Macaro (2001) argued that the indirect/direct and six-category model of LLS was problematic in its depiction and assessment of strategies as compartmentalized events. To reconcile this, he conceptualized a classification of LLS as occurring along continua dependent on the context of use, for example between 'conscious' or 'subconscious', or 'cognitive' or 'metacognitive'. His model also required information regarding the intended aim for using a strategy in order to determine how the selected LLS should be classified. Macaro (2006) expanded on this concept by stating that LLS are (or at least always begin as) mental acts. He provided a framework for LLS use based in L2 processing (Levelt 1989) that stressed the importance of individual differences (cognitive style, learning style, motivation) and that they influence the strategy choice and use of learners. This model also offered an extended paradigm for strategy classification, highlighting that strategies are not usually performed in isolation, but are often performed in clusters, operating in tandem to complete a given task in a given context. As such, the differences between learners, the task at hand, and the contexts in which LLS are chosen and used should all be addressed when aiming to understand strategic language learning from research and pedagogic perspectives.

Tseng, Dörnyei and Schmitt (2006) offered a model for assessing 'strategic learning', focusing on learners' self-regulative behavior as a dismissal of the

study of LLS, citing issues with definitional fuzziness and overlap in classification models in LLS research. As a firm response, Oxford (2011) assimilated Tseng et al.'s (2006) model into her own strategic self-regulative (S2R) model of LLS. The model conceives of three interlocking but flexible strategy dimensions (cognitive, affective and socio-cultural interactive) that operate interconnected on two levels – a governing, self-regulative meta-strategic level, and a strategy level that is operated through employment of discrete tactics (strategies suited for a specific task or context).

Griffiths (2013) offered an inclusive, elegant definition of LLS based on the available literature, stating a list of prototypical-definitional features of learning strategies. Those features included some kind of activity performed, consciousness of performing that activity, choice on the part of the learner, goal-orientation of strategy use, self-regulative capacity, and a learning focus (Griffiths 2013:7–8).

However, demonstrating the complexity of describing a universally accepted version of what LLS are, Oxford (2017) recently performed an extensive content-analysis of the field, citing 33 existing definitions of strategic language learning. Oxford's response was to create a holistic definition that encompasses eight major themes occurring in published LLS research. The major themes relevant to defining LLS describe strategies as being diverse in form, as being purposeful and having particular purposes, as being conscious acts, as being flexible in their use, as occurring in contexts rather than vacuums, and as being teachable. She combines these themes, defining L2 learning strategies as,

> "…complex, dynamic thoughts and actions, selected and used by learners with some degree of consciousness in specific contexts in order to regulate multiple aspects of themselves for the purpose of (a) accomplishing language tasks; (b) improving language performance or use; and/or (c) enhancing long-term proficiency. Strategies are mentally guided but may also have […] observable manifestations. Learners often use strategies flexibly and creatively […] orchestrat[ing] them to meet learning needs. Learners in their contexts decide which strategies to use. Appropriateness of strategies depends on multiple personal and contextual factors." (Oxford 2017:48).

As selected and conscious actions performed by learners, it is an assumption that learners must have learned a particular strategy (through instruction or other means) to be aware of it, and ultimately employ it in their own learning processes. Strategies are also assumed to be beneficial to learners (when used appropriately) as they are performed to accomplish tasks, improve language performance, and enhancing proficiency for the long-term. Operating on these assumptions, it seems that investigation into the use of LLS by learners is not only warranted, but could provide helpful illustrations of how *learning* itself is facilitated by individuals with regards to more specific aspects of language. In

this way, Oxford's definition provides pivotal grounds upon which other distinct context-specific L2 learning strategy definitions (e.g. vocabulary learning strategies) can be anchored upon.

2.2.2.2 Factors Affecting Language Learning Strategy Use

An avenue of LLS research investigates reported or observed strategy use by various contextual and demographic groups to determine if there are observably significant differences in these groups. The applied value of these studies lies in their contribution to helping better understand certain learner demographics with regards to possible common strengths, weaknesses, and expectations. Their findings stress that groups of learners have varying needs, learning styles and approaches to learning language. Recognizing these differences and attending to them where appropriate is paramount in facilitating both good pedagogical practices and research methodology.

2.2.2.2.1 Language Proficiency

Language proficiency is an evaluative measure of a learner's level of knowledge and ability in using a given language. In SLA contexts, a popular measure used in both pedagogy and research is the Common European Framework of Reference for Language Proficiency (CEFR[4]), which defines levels of language proficiency with regards to 'can do' language ability statements that are categorized in a measurement range from A1 (beginner) to C2 (fluent). Correlations between the proficiency level of a learner's TL and their strategy use have long been sought after in LLS research areas.

Bialystok (1981) showed that across all levels of proficiency, language practicing strategies indicated usefulness, but as students gained in proficiency, grammar-based strategies began to suffer decreases in effectiveness. Furthermore, using higher numbers of strategies in general have been found to be significantly correlated to higher TL proficiencies in learners (Oxford 1996). Positive relationships can also be seen between higher levels of TL proficiency and higher self-assessments of learners' own strategy use (Oxford 1999). Both Cohen and Macaro's (2007) and Griffith's (2008) volumes synthesize empirical and qualitative LLS studies, substantiating positively correlated relationships

4 All references to L2 proficiency in this project that are accompanied with CEFR level indicators (e.g. A1, A2, B1…) refer to the ability rubrics set forth by the Council of Europe (2011). Their language proficiency polices can be accessed at https://www.coe.int/en/web/language-policy/home.

between the use of certain types of LLS, TL proficiency levels, learners' vocabulary size, and improvements in learners' speaking and reading skills.

2.2.2.2.2 Multilingualism

Multilingualism, in the current context, refers to how many languages are 'known' by an individual – either as native languages or additional languages that have been learnt or acquired in some way. A majority of the relatively sparse work that has performed investigating connections between a learners' level of multilingualism and their reported LLS use seems to indicate that multilingual language learners have a noted advantage over monolingual learners. These advantages are seen in their greater level of language learning success (Ramsey 1980), their tendency to use LLS more efficiently (Nation & McLaughlin 1986) and with greater flexibility and intuition for appropriate application (Nayak, Hansen, Krueger & McLaughlin 1990) when compared to monolingual learners.

Bilinguals have been shown to use more frequent and varied LLS than their monolingual counterparts (Hong-Nam & Leavell 2007; Mitits & Sarafianou 2012; Tuncer 2009). Psaltou-Joycey and Kantaridou (2009) compared the use of LLS between Greek monolingual, bilingual and trilingual students, observing that trilinguals used LLS even more frequently than bilingual learners. However, Mitits (2016) found that bilingual learners only used significantly more memory and compensation strategies – specifically through the use of creating mental linkage and productive use strategies in order to remember new information, and by intelligently guessing and using context clues to overcome communication limitations (p. 703).

2.2.2.2.3 Age

Oxford (1990) notes in her book that age influences LLS use, indicating that older learners with higher proficiencies tend to use more varied LLS than younger and less proficient learners. However, research performed explicitly investigating the relationship between age and reported LLS use has been inconsistent.

Oxford and Nyikos (1989) included age in a list of demographic variable information collected alongside university level learners' reported frequency of LLS use. Students who had been studying a language longer (over 4-5 years) used more communicative and conversational strategies than those with less language learning experience. Devlina's (1996) comparison of LLS use between younger and older students suggested that older students employed more metacognitive strategies, reflecting on and planning their learning more than younger students. Lee and Oxford (2008) found that younger learners tended to use more social strategies than any other, while adult learners relied on meta-

cognitive planning, organizing and evaluation of their own learning. Chen (2014) surveyed 1023 EFL learners in China using the SILL, dividing the large sample into primary students, junior high school students, senior high school students and tertiary students. The senior high and tertiary school students used significantly more compensation strategies than the primary level students, and the oldest group, tertiary students, used social and affective strategies significantly more frequently than any other group.

2.2.2.2.4 Gender

Studies concerning the gender of learners in relation to their LLS use are largely inconclusive and seem to be highly context-specific with regards to results. Green and Oxford (1995) performed a study using the SILL to explore LLS use by university-level language learners in Puerto Rico in relation to their learning success. Upon inspection of findings, their data suggested that female learners used LLS more frequently and with a more varied repertoire than their male counterparts. However, Sung (2011) investigated American Chinese language heritage learners' use of LLS according to a variety of demographic variables. Gender had no significant relation to LLS use, though home language, culture, and having studied other foreign languages significantly influenced frequency and variation of strategy use, likely related to the heritage learning context.

2.2.2.2.5 Language Learning Achievement

A large swathe of investigative LLS research concerns language learners' success and achievement in learning a TL as related to their LLS use. Rubin (1975) pioneered exploratory language strategy research, revealing that 'good language learners' seemed to favor certain types of LLS that ineffective language learners did not. She classified good language learners as willing and accurate guessers, as having strong drives for communication, as willing to make mistakes, as looking for patterns and analytical, as practicing often, as self-reflective of their own speech and of others, and as paying attention to meaning. Stern (1975) expanded upon the differences between 'good' and less successful language learners noting contrasts in personal characteristics, learning styles, and strategy choices. Further, effective language learners have been observed as displaying high degrees of autonomy, and able to articulate the processes that facilitate their language learning (Nunan 1991). By and large, higher levels of language learning success were accompanied with higher frequency and more varied LLS use by learners (e.g. Griffiths 2003; Lai 2009; Naiman, Frohlich, Stern & Todesco 1978; Oxford & Green 1995), and successful learners choose strategies appropriate to the demands of the learning task at hand (O'Malley & Chamot 1990).

Studies have also sought to determine what specific types of LLS are used by more effective language learners. Erhman (1996) compared differences between effective learners and less effective learners, finding that the effective learners tend to employ more deep-processing strategies (and less rehearsal strategies) with greater frequency and organization, and are more aware of their learning needs. Wong and Nunan (2011) compared the learning styles and strategies of effective and ineffective university students in Hong Kong, finding that effective students exhibited learning styles and strategies that actively used the target language, emphasizing practice in a "naturalistic situation" (p. 148), for example, engaging in conversation and practicing active listening. Less effective learners preferred learning styles and strategies that were more based on top-down authoritative instructions (i.e. asking the teacher, referring to the textbook). This research goes to reinforce earlier findings by Naiman, et al. (1978) that indicated good language learners exhibited active language use, and better autonomy and self-direction in their language learning and strategy use.

2.2.2.2.6 Learner Motivation and Self-Regulation

Benson and Gao (2008) refer to motivation as an 'acquired attribute' of learners' individual differences. LLS use and motivation have been shown to correlate in language learners, perhaps in a reciprocal fashion wherein LLS use influences motivation for learning, and vice-versa. For one, strategy instruction can be used to foster greater sense of autonomy in language learners (Wenden 1991), which can lead to improved confidence and effort in their studies and LLS use. Furthermore, training learners' LLS use has been shown to lead learners towards stronger motivation for language learning and higher perceived utility of LLS learnt and used (Nunan 1997), as well as resulting in increased self-confidence and self-esteem for language learners (McDonough 2005). Oxford (1996) discovered a positive link between the use of LLS and self-efficacy during language learning for students. Conversely, an already high level of motivation for language learning and positive learning beliefs concerning language has resulted in the use of more LLS, which in turn, helped to reform and elevate those learners' beliefs and motivations (Yang 1999). Stoffa, Kush and Heo (2010) were able to examine the relationship between LLS and motivation through the use of two questionnaires. Their findings indicated that positive motivation correlated to more frequent use of all LLS, but specifically, high motivation significantly correlated to the use of meta-strategies for language learning.

2.2.2.2.7 Language Learning Strategy Instruction

One major result of LLS research has been its application to the language classroom, focusing on instructing language learners on what LLS are and how to use them. Investigations into the effects that strategy instruction has on language learners have revealed that systematic strategy instruction can be related to improved proficiency in using certain language skill areas (O'Malley & Chamot 1990), and can significantly reduce the amount of time needed for acquiring high levels of L2 proficiency (Leaver 2003). Strategy instruction has also shown to result in significant gains related to acquired content knowledge and language skills, as well as higher frequency of use for LLS overall (Chamot 2007). The teacher's role as strategy instructor is instrumental in helping learners become more aware, autonomous and proficient in their use of LLS, and overall language acquisition (Cohen 1998).

An emphasis on explicit approaches to instruction is prevalent in many models designed to guide instructors towards best practice in effective strategy teaching (e.g. Chamot, 2005; Grenfell & Harris, 1999, Macaro 2001). However, explicit instruction should be performed with the intended goal of helping students to familiarize and internalize students' strategy use to the point of automaticity (Grenfell & Harris 1999). Rubin, Chamot, Harris and Anderson (2007), in a chapter rounding up strategy instruction research efforts, note that all teaching models commonly involve four steps that seek to gradually provide learners with greater autonomous learning skills connected to strategy use. Those steps (first reported in Chamot, Barnhardt, El-Dinary, & Robins 1999) are:

1. Raising awareness of the strategies that learners are already using.
2. Teacher presentation and modeling of strategies so that students become increasingly aware of their own thinking and learning processes.
3. Multiple practice opportunities to help students move towards autonomous use of the strategies through gradual withdrawal of the scaffolding.
4. Self-evaluation of the effectiveness of the strategies used and transfer of strategies to fresh tasks.

Hajer, Meestringa, Park and Oxford (1996) also argued that explicit strategy instruction trumps implicit instruction in terms of student acquisition of new strategy use when integrating LLS into students' learning repertories. Additionally, they provided a useful guide of what they called the four 'levels' of language strategy instruction. Level one 'Blind strategy instruction' (implicit, lowest effectiveness) involved integration of strategies into L2 textbooks or teaching, but without explicitly calling attention to what they are and how

to use them. Level two 'Somewhat informed strategy instruction' calls for an instructor to name strategies, explain what they are used for, and to ask students to use them. Level three 'Informed strategy instruction' is characterized by the teacher naming a strategy, demonstrating its use, explaining its usefulness, then asking students to use the strategy. The fourth level 'Completely informed strategy instruction' (highly explicit, highest effectiveness) is the level that Hajer et al. regard as best practice. It involves the instructor performing all parts of level three, but then going on to provide learners with practice on how to reflect on strategy use, evaluate their individual success, and how to transfer the strategy to other tasks. This model serves to illustrate the range of what students are likely to experience in terms of strategy instruction in language classroom environments, and to establish what strategy instruction entails.

2.2.3 Vocabulary Learning Strategies

LLS are the intentionally conceived, self-chosen and goal-oriented activities that learners perform to enhance and their own language learning (Griffiths 2013). However, 'language learning' in this sense refers broadly to the wide ranges of linguistic knowledge that language learners may try to gain through LLS use. Subsets of LLS attempt to zoom in certain types language knowledge, and the specific strategies employed by learners to augment their learning experience. In this section, strategies used to learn vocabulary knowledge will be explored with regards to their defining features, various classification models, data collection methods, and factors that affect their use by language learners.

Vocabulary knowledge is a vastly complex concept spanning many interrelated features (see section 2.1.5) that vary in levels of salience to the individual language learner (see article IV). As such, learners must rely on a variety of methods with which to acquire L2 vocabulary knowledge in ways that are individually meaningful and that encourage faster retention and recall of that knowledge. Strategic approaches to vocabulary learning involve choice of strategy per task, some level of complexity that may require several steps, and prerequisite knowledge. These approaches benefit the learner when used and trained, and are done to facilitate greater efficiency in vocabulary learning and use (Nation 2013). Oxford (2017) offers a holistic conceptualization of how to conceive strategic vocabulary learning as related to her meta-review definition of LLS (section 2.2.2.1) used as a conceptual anchor. She defines vocabulary learning strategies (VLS) as,

> "[…] teachable, dynamic thoughts and behaviors that learners consciously select and employ in specific contexts to improve their self-regulated, autonomous L2 vocabulary development" (p. 244).

Vocabulary development here is assumed to refer to the establishing and improving of word knowledge through the use of VLS. Gu (2003:2) notes that vocabulary learning strategies should serve two purposes when it comes to their use for learning word knowledge: knowing things about words and being able to use word knowledge productively. Regarding the conscious selection and employment of VLS by learners, Gu also notes that the choice of strategies used to acquire vocabulary knowledge and the effectiveness of those strategies depends on individual learner differences and approaches to language study, the learning task at hand, and the environment that learning occurs in.

2.2.3.1 Types of Vocabulary Learning Strategies

Many forms of VLS have been explored in a variety of contexts – from associative and mnemonic techniques (Cohen 1990), repetition, key-wording, phonology, orthography, parts of speech and word imageability (Ellis & Beaton 1993), rehearsal, sound association, paraphrasing and mnemonics for word learning tasks (Lawson & Hogben 1996). It is perhaps impossible to determine which VLS is 'best' for a certain learning task since strategies are tools that are contextually reliant on a host of temporal and contextual factors that both inform and influence their effectiveness (i.e. learner, task, environment). However, classifying types of VLS can help lead towards smoother VLS instruction and improved reflective VLS practice on the part of instructors and learners. A survey of different types of VLS arranged by their relation to establishing new knowledge, improving known knowledge retention and recall, productive and creative knowledge use, and meta-strategic regulation is presented below.

2.2.3.1.1 VLS for Establishing New Word Knowledge

Learning vocabulary is a vital component to any language development and to successful language use. Our human world is rich in lexical input (i.e. verbal and written discourse, signage, media) that we constantly negotiate for meaning. We attend to linguistic input to negotiate meaning through formally written sources (e.g. dictionaries, glossaries and lists in textbooks), communicative sources (e.g. asking teachers, learners, native speakers), and even engage in it in less explicit contexts (e.g. experiencing word use or meaning in everyday life, in media). As Nation (2013) puts it,

> "[Lexical] information can involve all the aspects involved in knowing a word … [and] can come from the word itself, from the context in which the word occurs, from a reference source, or from drawing on analogies and connections with other languages" (p. 330).

Using some kind of dictionary (monolingual, bilingual, electronic, online) as a source for word knowledge is a well-studied area with regards to the field of reading strategies for L2 text comprehension (e.g. Hulstijn, 1993; Laufer & Hill, 2000; Luppescu & Day, 1993; Scholfield 1982). Most findings seem to trend towards dictionary use as a valuable strategy for reading text, resulting in better comprehension, though more useful while combined with other contextual guessing strategies (Stahl & Fairbanks 1986).

Sourcing new word knowledge through informed guessing is a powerful tool for readers when working to comprehend language input and for logging new word information in their lexicon. This level of attention to TL input requires 'noticing' new word information on a conscious level (Schmidt 1990) and a subsequent awareness of a word in its situated context and related learning task (i.e. comprehending text, comprehending a speaker) (Robinson 1995). This conscious noticing of a new word (or new word information) encompasses the process of a learner seeing a word as an item to be learned, and treated as such (Nation 2013:331).

Gu and Johnson (1996), as a feature of their VLQ instrument taxonomy, subdivided VLS used for establishing new word knowledge into two categories; 'learning from background knowledge and linguistic cues' and 'learning from context'. Background knowledge refers to strategies that use a learners' cumulative previous educational, societal, cultural and life experience to help guess at word meaning or knowledge features. Linguistic cue strategies utilize related linguistic information available to the learner when guessing new word knowledge, such as related words, word type, morphological form, orthographic form, etymological information, and so on. Contextual guessing strategies use the (usually) immediate surroundings of a new word to help guess at its meaning - e.g. using the sentence, phrase, passage or overall text that it occurs in, using nearby, connected audio or images, or looking for examples in a text that help to inform new word meaning.

Context-based strategies for establishing new word knowledge have been praised as valuable strategies for L2 learners (Oxford 1990), and when used frequently by learners have been shown to correlate with higher vocabulary size and proficiency (Gu & Johnson 1996). However, Lawson and Hogben (1998) found that contextual guessing strategies were less efficient than other approaches for reading – though noted that it was likely due to new words in their study being embedded in a context-rich environment, making the words

less important than the contextual meaning provided. As such, it is important to recognize that utilizing context information to guess or obtain new word knowledge is a complex process that involves an intersection between the input information available in the immediate linguistic context, and the previous knowledge and experience of the learner that is used to scaffold comprehension or learning of that new information.

2.2.3.1.2 VLS for Improving Word Knowledge Retention and Recall

On a cognitive level, attention must be paid to words and word knowledge features in order to be learnt (Schmidt 1990). In this frame, learning is considered as the encoding of vocabulary knowledge through mental acts in order to retain this knowledge for future recall. Forgetting new words is quite easy – we begin to forget a word immediately after initially encountering it. Repeatedly engaging with words (i.e. lexical input) helps us to retain them (Anderson & Jordan 1928). This engagement typically involves viewing new words with related information (i.e. learners' L1 translation of the word), or repetitive verbalization of the word, aloud or silently to oneself. Verbalizing words aloud in repeat instances has been shown to be a more effective 'memorization' technique than silent repetition (Hill 1994; Kelly 1992). Increasing the time interval between each repeat encounter with words being studied has also shown to contribute to better retention and recall of new words (Baddeley 1990).

Repetition strategies are generally considered to be comparatively 'shallow' in their information encoding due to generally simple one-to-one, form-to-meaning associations that do not necessarily integrate the word into a deeper processing network, compared to other VLS. Reflecting on repetition strategies while summarizing Carter (1987), Gu (2003) cautions that beginner learners must learn a great deal of vocabulary when initially learning a language, and thus must perform strategies that are accessible to them, and that allow retention of large numbers of words. In Gu's words, "…it is necessary and legitimate to employ various repetition strategies at the initial stages of vocabulary learning" (p. 11).

Other forms of VLS that engage in the aforementioned 'deeper processing' of word knowledge largely focus on using various kinds of association building between words and other kinds of information (i.e. other words, notes, grammar, image, audio, etc.) in the effort to integrate the word into ones' memory networks. In other words, learners who perform encoding strategies are intentionally creating mental network associations with new or learned word information. This networking is intended to connect word knowledge to many varied memory nodes, resulting in faster, more regular, and more primed activation. Further, the encoding process is facilitated through selective attention to words and activation of connections to related knowledge, and in-

cludes whatever context or information item being associated to said words (Gu & Johnson, 1996; Robinson 1995). Associations may link new words to related words, concepts, or grammaticality, and might be made on paper, online using visual/audio vocabulary knowledge clusters, through note-taking, employing kinesthetic actions, or tactile sense impressions such as musicality (Oxford 1990).

One common style of encoding strategy takes the form of note-taking. Both efficient and less efficient learners take notes (Ahmed 1989), but little work has been done to explore how different kinds of note-taking strategies affect vocabulary learning (Gu 2003). This may be due to the varied approaches of note-taking by L2 learners. The style of note-taking has been shown to differ for individual learners in terms of what 'notes' should consist of, when notes should be taken, and how notes should be taken (McCarthy 1990). Nevertheless, note-taking strategies are important tools for learners, and a necessary component of vocabulary learning as it provides learners an opportunity to encode and/or store important information for later in an on-line fashion during input reception (i.e. classroom instruction).

Mnemonic devices are mental tools that, when used as VLS, mainly aim for the retention of paired-associates of some kind through linking a word form (spoken or written) to some kind of related knowledge or information (Gu 2003). That pairing is intended to facilitate more effective retrieval of L2 word knowledge (e.g. meaning) when the word is encountered by using activation of the paired-associate memory as a conduit for recall. A common example of a mnemonic device operating in this fashion would be the key-word method that involves a L2 word being remembered as linked to a sound-alike native word (i.e. the keyword) through an interactive image that involves both the L2 word and the L1 word, making an 'acoustic-image link' (Atkinson 1975). Many kinds of mnemonic device methods exist for use in vocabulary learning such as the peg system (for memorizing lists), the loci method (a.k.a., memory palaces), and so on. Though useful strategies for L2 vocabulary learning, Gu (2003) cautions sole reliance on mnemonic strategies due to their common reliance on retention of L1-L2 pairs, where vocabulary knowledge includes far more than simply translations (see section 2.1.5). The retention of a word meaning pair is only the beginning of the vocabulary acquisition process (Meara 1996), and not all words are equally suitable for mnemonic application (Ellis 1997).

Some encoding strategies focus attention onto the form of words in order to create associative links to facilitate retention. Using cognates, words with similar orthographic and/or phonetic forms in the L2 and L1, can be a helpful (or sometimes detrimental) tool for vocabulary learning. Swan (1997) discusses the ways that L2 learners can scaffold their learning of L2 words by

using patterns from their L1. For example, a learner can strategically note that L2 words often look different than L1 words, but work similarly (semantically or grammatically), and essentially treat L2 cognates like their L1 associate unless they have good reason not to. However, work conducted by Kellerman (1985) on cognate use by L2 learners showed that learners grow more cautious of simple L1 = L2 cognate use as they grow more familiar with the language being learned. The morphological form of words can also be attended to with intentions to encode and retain word knowledge. Nation (2013) argues for the value of strategically learning word parts as a means for vocabulary learning, noting that, "Being familiar with the common word parts can provide a useful basis for seeing connections between related words, checking guesses from context, strengthening form-meaning connections, and in some cases working out the meaning of the word" (p. 330). He lists three strategic approaches to using word affixation for vocabulary learning: breaking words into new parts so that word affixes and roots are revealed, knowing the meaning behind common word parts, and connecting the meaning of the parts of a word, with the meaning of the word as a whole.

2.2.3.1.3 VLS Using Productive Use of Word Knowledge

Productive use of vocabulary requires the retrieval (recall) of previously encoded (learned) word knowledge. In that way, the productive use of vocabulary in speech or writing "… strengthens the connection between the cue and the retrieved knowledge" (Nation 2013:331), where cues are either written or spoken in form, and the responding, retrieved knowledge entails meaning or use (in either form, depending on the form of production used). In this way, learners benefit from actively producing new words in communication, such as writing sentences or making conversation. Importantly, productive use of vocabulary also signals to their particular language communities that they are participating and included members of that community (Nation & Moir 2008).

VLS based in productive use of word knowledge help to provide learners both in developing communicative skills in their TL, but also to reinforce retention and recall abilities for word knowledge engaged. Creative productive use strategies occur across the four skills (reading, writing, speaking, and listening), and "include attaching new aspects of knowledge to what is known through instantiation (visualizing examples of the word), word analysis, semantic mapping and [by knowledge mapping through the use of] scales and grids" (Nation 2013:332).

2.2.3.1.4 VLS for Self-Regulation

Meta-strategies are the strategies used to regulate one's learning with regards to their motivation, emotions, planning, strategy choice, and how to use those strategies. Having a clear strategy for deciding what vocabulary to focus on and where to find it, for example, can help to govern the use of which strategies you will use to find certain words, and how to approach the retention of words deemed to be important (Barker 2007). Regulation of vocabulary learning can also include knowing what learning goals an individual has for the L2, and then choosing which vocabulary should be focused on in order to achieve these goals (Nation 2013:329). Successful vocabulary learners have been shown to self-evaluate their own selective attention towards L2 vocabulary strategies, and vocabulary words chosen for learning (Gu & Johnson 1996). Kojic-Sabo and Lightbown (1999) observed that successful vocabulary learner groups actively (and consciously) employed wider ranges of VLS during word learning than less successful learners.

2.2.3.2 VLS Taxonomy

Several models presenting taxonomy of VLS classifications have been attempted, often as a result of large-scale studies investigating language learner VLS use in a given context (e.g. Fan, 2003; Gu & Johnson, 1996; Schmitt, 1997; Stoffer 1995). However, Nation (2013) offers up a VLS taxonomy that transcends simply listing strategies that draw from similar sources for gathering or training word knowledge, such as 'dictionary strategies' (e.g. Fan, 2003; Gu & Johnson 1996). Rather, the taxonomy focuses on describing strategic vocabulary learning as belonging to three separate classes that follow the processes involved in finding, facilitating learning of, and enhancing retention and future use of L2 words. Nation's taxonomy does not attempt to list all possible VLS within each strategy class, rather, describes what *kinds* of strategies might be included in each class.

The three main classes are 'planning' strategies, or choosing what word knowledge to focus on and when to focus on it, strategically using 'sources', or finding information about words, and strategically 'processing' words, or better establishing already known word knowledge. A fourth, somewhat encompassing classification he calls 'skill in use' refers to the strategic enrichment of language proficiency and fluency through analysis (listening, reading) and production (writing, speaking) of vocabulary in the target language (Nation 2013:328).

Table 4: *Nation's (2013:328) VLS Taxonomy.*

General class of strategies	Types of Strategies
Planning: choosing what to focus on and when to focus on it	Choosing words Choosing the aspects of word knowledge Choosing strategies
Sources: finding information about words	Analyzing words Using context Consulting a reference source in L1 or L2
Processes: establishing knowledge	Noticing Retrieving Generating (creative use)
Skill in use: enriching knowledge	Gaining in coping with input through listening and speaking Gaining in coping with output through reading and writing Developing fluency across the four skills

The most oft-cited and influential models[5] will be presented below in order to provide a comparative illustration of how VLS taxonomy is conceived of through various underlying strategy constructs and in a variety of contexts. The table preceding these taxonomies compares them in relation to Nation's (2013) theoretical VLS taxonomy that is not explicitly represented by any questionnaire instrument.

Stoffer (1995) designed a 53-item Likert-style Vocabulary Strategy Inventory (VOLSI) with the intention to investigate which VLS English L1 speakers (*N* = 707) reported using at the university levels, learning a variety of different L2's. The study sought to reveal patterns of VLS use across the grouping variables of proficiency level for language learned, gender, age, perceived difficulty of courses, and previous VLS instruction. She concluded that previous VLS instruction predicted significantly higher frequency of VLS use in learners, and older learners used more VLS than younger ones. Furthermore, she found that more experienced language users used significantly more VLS than less experienced learners, and that learners' course difficulty significantly correlated with differences in authentic productive, creative, and mental associative VLS

5 Fan, 2003; Cited 486 times according to Google Scholar as of June 25, 2018.
Schmitt, 1997; Cited 1126 times according to Google Scholar as of June 25, 2018.
Gu & Johnson, 1996; Cited 1001 times according to Google Scholar as of June 25, 2018.
Stoffer, 1995; Citation data unavailable, but often referenced in discussions of VLS taxonomy history (e.g. Gu 2010; Schmitt 1997; Tseng et al. 2006).

use for learners. Through the use of factor analyses, her collected data led her to offer a VLS category taxonomy that established categories for; authentic language use, creative activities, self-motivation, creating mental linkages, memory strategies, visual/auditory, physical actions, overcoming anxiety, and organizing words.

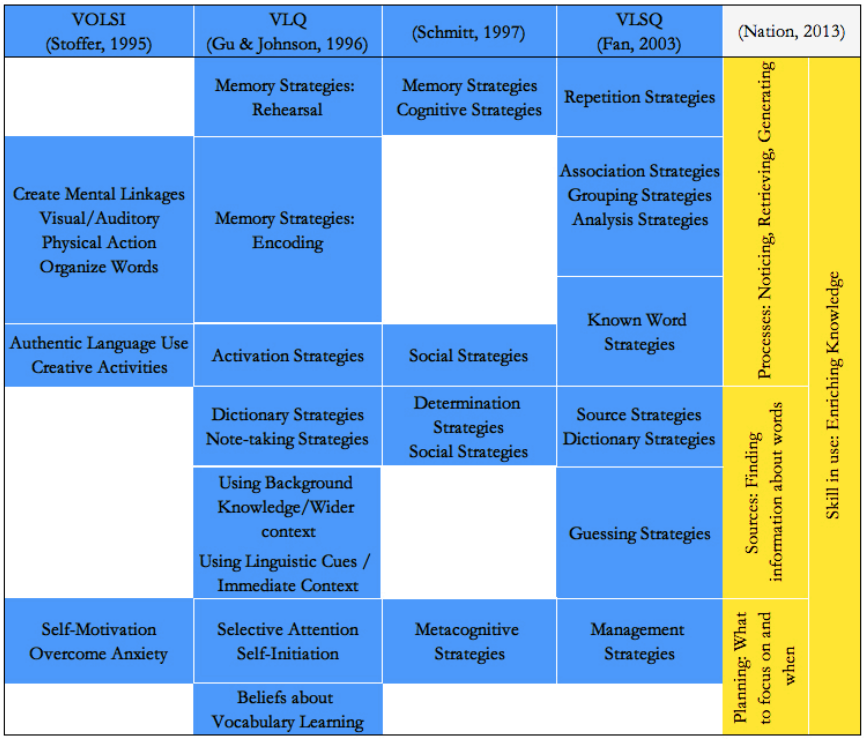

FIGURE 1: *VLS Questionnaire Taxonomy Comparison.*

Gu & Johnson (1996) performed a survey study exploring the VLS use of university-level Chinese L1 students (N = 850) learning English as a foreign language (EFL). They used the 108-item Likert-scale Vocabulary Learning Questionnaire 3.0 (VLQ3) to collect data. An underlying taxonomic system was used to arrange and design the VLQ3 that divided all items into 'vocabulary beliefs' that probed learner beliefs on their vocabulary learning situation, experience and motivation, 'metacognitive regulation' and 'cognitive strategies'. The cognitive strategy category consisted of guessing strategies, dictionary strategies, note-taking strategies, and memory strategies for both rehearsal and encoding. Their analysis concluded that learners seldom use a single strategy, instead reporting that they use a variety of VLS to approach vocabulary learning. Five learner profiles emerged from a cluster analysis of VLS

and vocabulary learning beliefs, grouping their participant sample into descriptive profiles regarding their generalized approaches to vocabulary learning. These profile groups were referred to as 'readers', 'active strategy users', 'passive strategy users', 'encoders', and 'non-encoders'. Recently, the VLQ was updated in order to primarily adapt it for English second language (ESL) students, reduce the item length, and evaluate construct validity, resulting in the VLQ6 (Gu 2018). The original underlying VLS constructs offered by the VLQ3 remained the same.

Schmitt (1997) sought to create a VLS taxonomy then use it to design a questionnaire that would be used to investigate how 'helpful' Japanese ESL learners (N = 600) felt certain VLS were with regards to their vocabulary learning. Learners responded with 'YES' or 'NO' as to whether each of the 58 listed VLS were helpful to them, and then listed what they felt to be the five most helpful VLS in each of the list's two sections. The taxonomy used split VLS into two groups: strategies for discovery of a new word's meaning, and strategies for consolidating a word once it has been encountered. Discovery strategies were further divided into determination and social strategy classifications. Consolidation strategies were divided into social strategies, memory strategies, cognitive strategies, and meta-cognitive strategies. The survey results indicated that guessing meaning from context and asking classmates for help were the most important VLS for new word meaning discovery. Repetition of words' verbal and written forms and studying a words' spelling were the most important reported consolidation strategies.

Fan (2003) performed a study of first-year university students in Hong Kong (N = 1067) learning English that sought to determine VLS use frequency for VLS perceived as 'useful' or 'not useful', and if language proficiency influences VLS choice. A 56-item Likert-style questionnaire, the Vocabulary Learning Strategies Questionnaire (VLSQ) was designed with influence from previous VLS research that was intended to collect VLS use and perceived helpfulness data. The nine VLS categories represented by the VLSQ involved management strategies (metacognitive strategies), source strategies, guessing strategies, dictionary strategies, repetition strategies, association strategies, grouping strategies, analysis strategies, and known word strategies. The study discovered that although students find a VLS helpful, they only sometimes will actually use them, and that students with higher proficiency in the TL are more likely to use a greater variety of VLS more frequently than lower proficiency students.

Table 5: *Breakdown of VLS Data Collection Instruments.*

Survey	Items	Measurement	Development	Framework
VOLSI (Stoffer 1995)	53	Frequency of use, Likert-scale (5-pint)	1. Items were reviewed by several experts in the area of foreign L2 learning. 2. No informants mentioned any other potential strategies during pilot, so initial items retained. 3. 1 item added for validity.	Bottom-up exploratory factor analysis of questionnaire feedback used to determine VLS categories.
VLQ (Gu & Johnson 1996)	108	Frequency of use, Likert-scale (7-point)	Did not report on methods.	VLS categories informed by previous research. Also collects learner belief data. VLS categories pre-determined.
(Schmitt 1997)	58	Usefulness, YES/NO rating; Top 5 'most helpful' rating	1. Vocabulary reference books/textbooks provide initial strategies. 2. Student reports on how they study vocabulary. 3. Teachers contribute to list. 4. Initial 40 strategies returned feedback for 6 more. 5. Conversations with teachers and students result in 58 strategies.	Pre-determined taxonomy, divided between VLS for discovery of new words and VLS for consolidating a word knowledge once encountered.
VLSQ (Fan 2003)	56	Frequency of use, Likert-scale (5-point); Usefulness, Likert-scale (5-point)	Nine VLS categories and items adopted from previous *learning strategy* studies: (Gu & Johnson 1996; Naiman et al. 1978; O'Malley & Chamot 1990; Oxford 1990; Rubin 1981).	No overarching VLS framework reported.

Table 5 above[6] provides an overview of the size, measurement style, development methods, and organizing frameworks for the instruments connected to the VLS taxonomies described above. These taxonomies have provided guidance and influence on the methodological processing for developing a VLS taxonomy that could drive the creation of a VLS data collection instrument (the SVLSS), and be used to organize interpretation of results from studies performed in this project. The survey of these prominent VLS taxonomy performed here is applied in a detailed comparison to the adopted taxonomy for the SVLSS developed during this project in article III (section 4.3).

2.2.3.3 Factors Influencing and Influenced by VLS Use

Although a portion of vocabulary acquisition research in SLA has focused on what kind of vocabulary learning strategy is most successful for a certain context and task, the highly contextual nature of VLS use (per task, per individual, per goal) renders the findings of these lines of research as futile as attempting to classify which kind of hammer is best for driving which type of nail into a which type of wood during any given weather pattern in a given location. Findings to contextually-situated 'best practice' of VLS use is, however, highly meaningful information to a specific context and its actual, individual learners and their instructor, yet perhaps less so for the research community at large. That said, this study seeks to establish preliminary findings for what relationships may exist between *what types of VLS* are used by learners, and *what factors might be related* to that VLS use (for results see section 4.6). This kind of work can allow future research to focus on VLS instruction with regards to the VLS use patterns of a group or demographic with the aim of better informing learners on unknown or unused VLS or by providing opportunities to learners for reflection on what VLS are, and how to use them effectively. Here, past research findings regarding the factors affecting VLS use are surveyed with regards to their relationships.

2.2.3.3.1 Proficiency

Learners' language proficiencies (or sometimes course levels) have been investigated with regards to their VLS use. Stoffer (1995) saw a significant relationship between a learners' frequency of VLS use and their TL proficiency and course level, finding that higher proficiencies and more difficult course levels correlated with increased frequency of VLS use. Loucky (2003) identified a significant cor-

6 Table 5 was adopted from article III (table 2) and extended to include Fan's (2003) VLSQ.

relation between Japanese college students' proficiencies and use – the higher the proficiency, the higher the VLS use frequency, the lower the proficiency, the lower the VLS use frequency. Fan's (2003) survey of Chinese tertiary level English L2 students' use of VLS also indicated positive correlations between higher proficiency in the TL and higher frequency of VLS overall. Such findings have been echoed by several other studies (Chang Tsai & Chang, 2009; Kung & Chen, 2004; Nemati, 2008;) that support the observation that a positive correlation exists between the overall or type-specific frequency of VLS use and the proficiency of learners in the TL. The red-thread in VLS studies regarding proficiency use seems to point towards a positive relationship between frequency and breadth of VLS use and proficiency. The more a learner progresses in a TL, the more strategies they can encounter, acquire, and potentially use.

2.2.3.3.2 Gender

Results concerning gender as a variable in assessing VLS use, much like results regarding gender and LLS use (section 2.2.2.2.4), have been elusively mixed and therefore largely non-conclusive throughout research investigations. Several studies have seen significant differences between male and female students' use of VLS (Catalan 2003; Jones 2006; Marttinen 2008; Watanabe 1990), though several others have shown no significant differences between binary genders' use of VLS (Arjomand & Sharififar 2011; Chang Tasi & Chang 2009; Madani & Azizmohammadi 2009). Boyle (1987) discovered that male students tend towards higher success than female students in listening related to vocabulary learning. However, it has been found by several other studies that female students exhibit significantly higher levels of VLS use frequency (Oxford & Nyikos 1989) as well as higher levels of willingness to try out and learn new VLS than their male counterparts (Gu 2002; Oxford, Lavine, Hollaway, Felkins & Saleh 1996; Young & Oxford 1997).

2.2.3.3.3 Motivation, Self-regulation, and Belief

A relatively small amount of research has focused directly on the influence of learners' motivations for learning L2 vocabulary, and VLS use. In spite of the size of the body of work, however, the research seems to indicate that the higher the motivation, the more VLS are used. Yet, due to the conceptual fuzziness of motivational research (see section 2.2.1.1), directionality between motivation and VLS use has been largely elusive and inconclusive. In an unpublished thesis, Fu (2003) showed that there seems to be a positive relationship between interest in vocabulary learning and actual VLS use. Relatedly, and in another unpublished thesis, high motivation for vocabulary learning was seen to correlate with reported use of a wider range of VLS, where lower motivation is linked with a narrower range (Marttinen 2008).

Attending to learners' beliefs concerning vocabulary learning, Gu and Johnson (1996) revealed that Chinese university students who devalued rote memorization strategies consequently used less memorization VLS, preferring more meaning-oriented VLS. However, contrarily, Wei (2007) found that students who believed that 'knowing a word' should reflect being able to use words in the right context ended up reporting using VLS that were focused heavily on short-term rehearsal of word form and meaning.

Learning beliefs will be revisited later in this project with regards to what Swedish L2 learners believe it means 'to know a word' (article IV, section 4.4), and are connected to the VLS use of this demographic during a synthesis of findings in section 4.6.3.

2.2.3.3.4 Language Learning or Vocabulary Learning Achievement

In general terms, more frequent and varied use of VLS have been connected to more successful language learning in a variety of contexts. Ahmed (1989) found that 'good language learners', characterized by high motivation and high levels of achievement, used more frequent and more varied VLS than 'poorer learners'. Relatedly, adults who used a more structured and consistent approach to confident VLS choice and use were found to be more successful language learners than those with unstructured, sporadic, and unconfident VLS use (Sanaoui 1995). Further, when language learners make VLS use choices according to their own individual preferences and learning styles, it has been shown to result in more productive vocabulary learning (Riding & Rayner 1998). Kojic-Sabo and Lightbown (1999) found higher levels of academic vocabulary knowledge and proficiency linked to learners using more frequent and elaborate use of VLS, where poorer performance was linked to reportedly less use of VLS. However, Barcroft (2009) found that learners choose VLS that might not be the most effective choice for a given context or task. Participants in his study reported using a higher frequency of 'ineffective surface strategies' (i.e. repetition) over 'more effective' mnemonic and L2 word-to-connected-image associative strategies, even though they knew that those VLS types were connected to more shallow or deeper learning, respectively.

2.2.3.3.5 Age

Surprisingly, to the knowledge of this author, nearly no research has been performed explicitly investigating the differences of VLS use between different age groups of language learners at adult levels. Only Stoffer (1995), in a large-sale questionnaire study investigating the use of VLS by university-level learners studying a variety of TL, found that older learners employed VLS with significantly greater frequency than younger learners. Considering the pedagogical and cognitive implications of age on learning (see section on adult learning,

2.1.4), detailed investigations into comparative VLS use by certain learner age groups is more than warranted. Findings regarding age in this project can be viewed in report I (section 4.5) and discussed further in section 4.6.3.

2.2.3.3.6 VLS Instruction

With VLS use across many studies largely pointing towards a more motivated, efficient, or productive vocabulary learning process, justifiable research has been undertaken to evaluate how VLS instruction can influence learners' vocabulary learning experience and what provisions might be offered for instructive practices. Reviewing VLS classification and use from a learner perspective, Nyikos and Fan (2007) argue for VLS instruction integration into language teaching curricula as it can significantly improve vocabulary learning and help to satisfy learners' needs in learning a language. Nation and Moir (2008) discovered that VLS instruction, if provided, should be done so with strong explanation and scaffolding that involve goal setting, practicing use, and being reflective of word choice. Otherwise, like the participants of their study, knowledge and potential benefits gained from shallow VLS instruction may be simply ignored in favor of more comfortable, 'easier' study approaches.

Mizumoto and Takeuchi (2009) performed a 10-week study concerned with assessing the effectiveness of explicit VLS instruction on 146 Japanese EFL learners at the university level. The VLS curriculum was taught once a week for 30 minutes, focusing on instructing students on various classifications of both cognitive and metacognitive VLS chosen from previous VLS research (Fan 2003; Gu & Johnson 1996; Schmitt 1997). Using VLS questionnaires and a vocabulary test to evaluate students' VLS use over the period, it was found that students who received VLS instruction over the period outperformed those who did not receive instruction. The VLS-taught students reported expanded VLS repertoires, higher frequencies of VLS use (that varied according to type of student), improved motivation, and improved vocabulary test scores.

2.2.3.4 VLS in the Swedish L2 Context

To the knowledge of this author, there has been little dedicated research on VLS and LLS use in the adult Swedish L2 learning context. Much of the data collection regarding VLS and LLS use of Swedish L2 learners has been supplementary to larger projects in qualitatively describing learner groups, or has focused on younger-to-adolescent-aged learners.

As an example of LLS and VLS study performed as supplementary to broader research aims, Granberg (2001) utilized Oxford's (1990) SILL coupled with

interviews to collect data on reported LLS use of a single adult Swedish L2 learner as one part of a longitudinal, qualitative case study intended to provide an illustration of her learning experience in Sweden. Similarly, Sandh (2013) utilized a demographic survey coupled with the SILL to investigate which VLS two groups of adult, mixed-proficiency Swedish L2 learners ($N = 30$) used. Her data suggested that meta-cognitive and social strategies were most popular, with affective strategies being unpopular. Learning profiles were established indicating expert vs. novice, time spent studying, L1 and motivational groupings, but no statistical analyses were performed on said data. This work was inspired by the *STRIMS-projektet,* a Swedish research initiative during the 1980's and 90's that was concerned with performing exploratory research on the LLS that Swedish students use to learn modern world languages in public primary and secondary school contexts (Tornberg et al. 2000).

Other studies concerning LLS or VLS use have focused on young-to-adolescent learners in the Swedish public-school system, though some did not report explicitly on strategy use after collecting some kind of data on their use (Allestam, 2007; Malmberg 2000). Wareborn (2004) performed a three-year longitudinal study of two Swedish L2 classes at a public junior high school in Sweden. They used an adapted version of the SILL coupled with language learning tasks, interviews and classroom observations to collect rich, qualitative data on students' learning experiences. They found that the majority of the students investigated tended towards a 'traditional' learning style, relying more on the use of repetitive memorization learning strategies and approaches than creative or productive language learning approaches. Magnusson and Öggesjö (2013) sought to establish what contextual and learning factors were most important and influential to young English and Swedish L2 learners in Swedish public schools. Through the use of semi-structured interviews, they found that certain context factors, for example multimedia (film, advertisement, music) and/or social media use, influenced learning motivation and VLS used related to those context factors.

The lack of a detailed body of work explicitly focused on adult, Swedish L2 learners' use of VLS has served as a core motivating factor for the objectives of this project related to establishing preliminary research in this area (see sections 1.2.3 on the Swedish L2 context and 1.3 on project aims). In this sense, findings reported in section 4.0 and discussed in section 5.0 are presented in an effort to build a foundation for this area to move forward from in future work (section 6.5).

3. Methods

3.1 Overview of Performed Research and Methods

The timeline of this project has included five studies representing three phases of research. These phases concern the development of an VLS use data collection instrument, interpretation of self-report data on VLS use by this demographic, and situating a new instrument intended for the demographic within existing VLS research paradigms. Studies (and articles) are numbered according to the chronological order in which they were performed and reported on[7].

7 The time of numbering of articles and reports does not necessarily reflect the date in which the data was collected, interpreted, and reported upon. For more on the performed research timeline, see section 1.3.3.

Table 6: *Overview of performed research, methods, data and analyses.*

Phase	Article	Method	Data	Analyses
Instrumentation	I: Initial VLS List	Interview & Learning Task	Transcriptions, Observation notes	Content-Analysis
	II: Statistical Evaluation of SVLSS	SVLSS 1.2	Questionnaire response	EFA, Text Analysis, Readability, Reliability
	III: Theoretical Evaluation of SVLSS	VLS List Comparative Review	Stoffer, 1995; Gu & Johnson, 1996; Schmitt, 1997; Fan, 2003	VLS Questionnaire Meta-analysis
Exploring the Demographic	IV: Vocabulary Knowledge Beliefs	Open-ended Question	Written response	Content-Analysis
Establishing VLS Use for Demographic	Report I: Reported VLS Use and Patterns	SVLSS 2.0	Questionnaire response, Demographic Information	Analysis of variance, Cluster analysis

Phase one included article I, article II, and article III, which focused on development of the SVLSS instrument. Article I gathered qualitative interview and vocabulary learning task data regarding self-report VLS use from adult, beginner Swedish L2 learners. Content-analysis was used to disseminate the data into a collection of elicited and observed VLS which was used in creating a VLS list for the SVLSS 1.0. Article II involved the distribution of the SVLSS 1.2 in order to collect VLS use data that would be used to perform a final round of piloting for the SVLSS through exploratory factor analysis (EFA) and text analysis in order to evaluate validity and to revise the instrument. Article III examined the underlying constructs of the SVLSS 1.2 in comparison to other VLS taxonomy and questionnaires used in the field, proposing revisions for the SVLSS 2.0 with regards to VLS classification and coverage.

Phase two included article IV, focusing on individual differences and on further exploring the individual differences held by the demographic of interest. Article IV collected written text data on adult, beginner Swedish L2 learners' beliefs on 'what it means to know a word'. Content analysis was used

to investigate and catalogue their beliefs. The version of content analysis used in this study is reported on in detail in section 3.4.1.

Phase three included report I and sought to use the instrument developed in phase one to collect data on the demographic characterized in phase two. Report I performed a final round of data collection intended to establish an exploratory account of VLS use patterns reported by adult, beginner Swedish L2 learners in Sweden. As an important note, report I attends to the aims of both phase two and phase three in that it represents investigation into the ways learner demographic factors (i.e. individual differences) are related to VLS use.

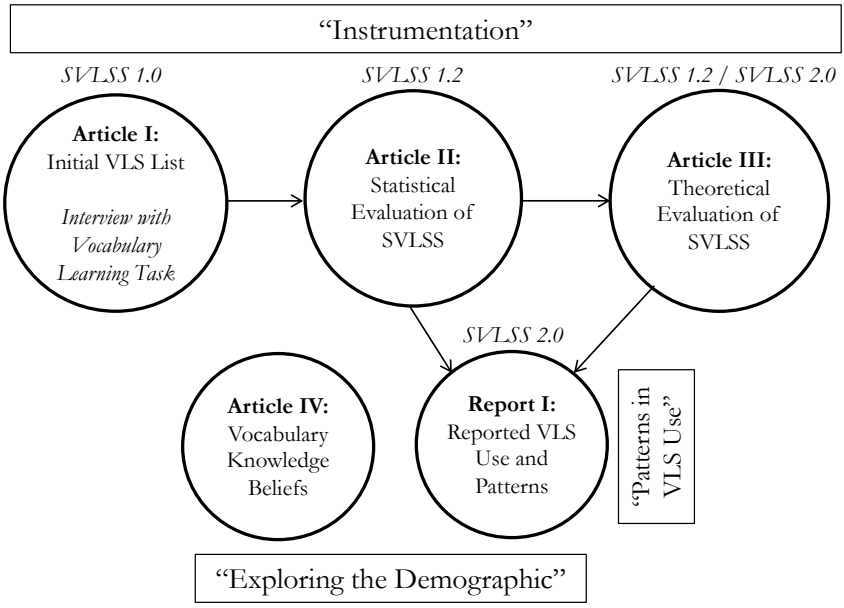

Figure 2: *Illustration of Research Performed in Project.*

Figure 2 provides a visual representation of the three phases of research performed in this project, and the ways that the five studies influence and interact with one another. The studies constituting phase one seek to address research question one, "What vocabulary learning strategies do adult, beginner learners of Swedish as a second language report using?", as well as facilitate development of the SVLSS instrument. Phase two studies seek to address research question two, "What individual differences can be observed that may contribute to better understanding adult, Swedish L2 learners as students of Swedish vocabulary?", and do so using a mixed-methods approach aimed at investigating learners' beliefs and individual difference factors. The final study in phase three addresses research question three, "What patterns, if any, exist in the reported

use of vocabulary learning strategies by adult, beginner learners of Swedish as a second language?" by using the instrument developed in phase one and situating its findings in results acquired in phase two.

3.2 Participants

Participants of this project were required to be adult, beginner learners of Swedish as a second language, taught at an institute of higher learning in Sweden[8]. The requisite for being considered 'adult' in this project was to be at or over the age of 18 at the time of participation. 'Beginner' learners of Swedish were defined here as possessing self-reported CEFR levels of A1, A2 or B1 in Swedish language. Only these levels of classes were surveyed at the various institutes of higher education that participated in this doctoral research project. Learners were required to be learning Swedish in Sweden while living there as either students, employees, or recent migrants.

This demographic of Swedish L2 learners was chosen for investigation connected to several pre-determined motivations. First, the learning experiences of adult and younger learners of language are significantly different with regards to their cognitive abilities and learning contexts (see section 2.1.4). Similarly, adult and younger learners have been shown to prefer varying learning strategies (see sections 2.2.2.2.3 and 2.2.3.3.5) in their L2 learning. In order to better control for these differences and to investigate more granular differences in the 'adult' demographic of learners, age 18 and up was chosen for a participant age group.

Beginner L2 learners exhibit LLS and VLS use that tends to vary from those used by more experienced L2 learners of language (see sections 2.2.2.2.1 and 2.2.3.3.1). Furthermore, beginner Swedish learners became a focus of interest for this project due to recent trends of increased immigration into Swedish society by non-native-Swedish speaking people. This has placed political importance onto expedient learning of Swedish language expected by these learners to facilitate their integration into Swedish society, also influencing the selection of this demographic for study. Overall, the VLS use of adult, beginner Swedish

8 These institutes included *both* university and non-university entities in Sweden. An example of a university entity is The University of Gothenburg, a fully accredited and state-funded higher education body. An example of a non-university might be Folkuniversitet, a non-state-funded educational entity that is privately run and not necessarily accredited to issue degrees for completion of studies.

L2 learners is area considered to be able to benefit from exploratory investigation that would provide a baseline of research with which to build upon (see sections 1.2.3 and 2.2.3.4 on previous research on the Swedish L2 VLS use context, sections 2.1.4, 2.2.2.2.3 and 2.2.3.3.5 on adult learning connected to language learning and strategic learning, and sections 2.2.2.2.1 and 2.2.3.3.1 on proficiency connected to strategic language learning.)

One specific demographic variable was not investigated in this study, namely gender. This is largely due to inconclusive variation in results of gender-focused research connected to strategy use (see section 2.2.3.3.2 and 2.2.2.2.4). Furthermore, the decision was made to avoid defining participating learners by their gender, instead maintaining focus on age, educational and language backgrounds, and other demographic information immediately pertinent to language learning contexts. As such, this study has explicitly left gender out of its demographic surveys during all phases of data collection owing to a focus on other individual differences for learners in the Swedish L2 vocabulary learning context.

3.2.1 Participant Sample for Project

A total of 707 participants were involved in data collection efforts during the course of this research project. Data collection events here refer to article I, article II, report I and article IV. One data collection event (article I) was iterative, involving pilot sessions that involved more participants. Participants involved in article IV were a subset of the participant sample reported in article II. Some participant responses that did not fit the demographic profile were deleted from the final participant samples in all data collection events. After data cleaning, a total of 596 participants were involved in the reported studiesof this project[9]. Regarding data collected using the SVLSS 1.0-1.2, three data collection events were performed: two preliminary pilots with smaller groups (N = 16 and N = 28) intended to gain feedback on readability and appropriateness for the item list, then a primary pilot (N = 182) that was used to perform exploratory validity evaluations regarding the item list.

9 Article IV participants appear in brackets and are not counted towards participant totals as the data collected for the study originates from voluntary open-ended questions that appeared on the SVLSS (version 1.2). Article IV's participants are therefore a sub-section of those involved in article II.

Participation in a preliminary pilot of an adapted version of the Gu and Johnson's (1996) VLQ is also listed. However, results from the initial adapted VLQ pilot are largely unreported by this project due to early recognition of problems with the instrument leading to the development of the SVLSS (see section 1.3). The table below outlines the participant sample numbers for each data collection event with regards to piloting, raw data, and cleaned data numbers.

Table 7: *Number of Participants in all Studies.*

	(VLQ Pilot)	Article I	Article II	Report I	(Article IV)	Total
Pilot(s)	(23)	5	44	-	-	49
Core Data	-	15	199	421	(118)	635
Deleted	-	2	17	20	(7)	39
Clean Data	-	13	182	401	(111)	596
Study Total	(23)	20	243	421	(118)	= 707

All participants provided demographic information as a part of each study that they participated in. Demographic information tables related to each study that resulted in an article are presented with their summarized results in section 4.0.

During data collection across the project, some responses to demographic information were either unclear or left blank by participants. This resulted in some missing values for reported participant demographic information across all studies. However, the missing values were deemed statistically insignificant with regards to all number-dependent analyses performed on collected data.

The participants involved in this project are a demographically diverse group. The table below is an aggregation of the demographic information collected from individual participants for the semi-structured interviews with vocabulary learning task (article I), SVLSS 1.2 distribution (article II), and SVLSS 2.0 distribution (report I).

Table 8: *Demographic Information for all Participants in all Studies.*

	Article I	Article II	Report II	Totals	% Total Reported
Education					
High School / Some College		36	134	170	28.7%
Associates Degree		3	21	24	4.1%
Bachelor's	8	66	161	235	39.7%
Master's	3	50	51	104	17.6%
PhD	1	27	31	59	10.0%
Total Reported	12	182	398	**592**	

Proficiency					
None	0	23	102	125	21.2%
A1-A2	13	108	241	362	61.3%
B1-B2	0	51	53	104	17.6%
Total Reported	13	182	396	**591**	
Multilingualism					
Monolingual	2	7	17	26	4.4%
1 Additional Language	3	75	152	230	38.6%
2 Additional Languages	5	52	187	244	40.9%
3+ Additional Languages	3	48	45	96	16.1%
Total Reported	13	182	401	**596**	
Native Language Families					
Germanic	7	72	187	266	44.6%
Romance	2	40	91	133	22.3%
Slavic	2	24	23	49	8.2%
Koreanic	0	0	3	3	0.5%
Japonic	0	3	5	8	1.3%
Baltic	0	3	6	9	1.5%
Helenic	1	10	10	21	3.5%
Indo-Aryan/Iranian	0	7	23	30	5.0%
Uralic	1	5	13	19	3.2%
Sino-Tibetan	0	10	24	34	5.7%
Turkic	0	3	8	11	1.8%
Austronesian	0	0	2	2	0.3%
Semitic	0	5	6	11	1.8%
Total Reported	13	182	401	**596**	

	Age	**Time Studying**	**Time Spent in Swedish Language Environment**
Mean	26 yr.	5.5 mo.	9 mo.
SD	7.9	8.3	16.6
Min	18 yr.	0 mo.	0 mo.
Max	65 yr.	80 mo.	144 mo.
Mode	21 yr.	1 mo.	1 mo.

A great diversity of learner L1s were reported by participants. In order to better display a more accessible illustration of those native languages, they were compiled into language families according to typological history and similarity[10]. The languages included in each native language family can be seen in the appendix, section 9.1.

3.3 Instruments and Collected Data

Several forms of information were collected throughout the various stages of this doctoral research project. The following sections are organized by each instrument used, and describe the instruments as they were distributed to participants[11]. The distribution process for each instrument, the form of data collected by the instrument, and the reasoning behind the choice for use of each instrument is presented in each section.

It should be noted at the outset that each form of data collected in this project (with the exception of observational notes during interview events) is centered on learners' self-report of their own experiences, thoughts, and learning behaviors. This situates the findings of this project largely within a learner-centric focus as most of the findings are borne from the beliefs and reflections of the target demographic sampled throughout this project. Limitations related to this form of data collection are confronted in section 6.2.

For information concerning analyses performed on collected data sets, see section 3.4. For details on the instrumentation processes and reasoning behind them for each instrument, please see section 3.5

3.3.1 Semi-Structured Interview, Transcriptions

A semi-structured interview format was chosen to collect information on how adult, beginner Swedish L2 learners approach strategic Swedish vocabulary learning. The semi-structured interviews were organized using a set of questions to guide the interview, but deviation from that guide was allowed in order

10 Native language families were determined through the use of guiding ethnographic and typological information from *Ethnologue* (Simons & Fennig 2018).

11 The SVLSS was distributed in a variety of forms during its instrumentation process. Defining characteristics of the instrument that carry across all iterations are provided in this section. For more detailed descriptions of each iteration, see section 3.5.2.

to follow conversation topics of interest or importance during the interviews (Mackey & Gass 2012:188). Questions in the semi-structured interview guide were written to be as open-ended as possible, while being comprehensible and accessible for all participants. Interviews were held in English due to its role as a mediating (and reportedly most comfortable) interviewing language for participants, and since participants were all beginner users of Swedish language at the time.

The purpose of the semi-structured interview was to collect a wide-reaching account of what VLS are used by adult, beginner Swedish L2 learners in a variety of contexts. The relatively open-ended nature of the semi-structured interview provides flexibility to follow avenues of interest and explanation provided by an interviewee of their own strategic vocabulary learning processes, while maintaining a level of consistency across topics discussed by all interviewees. Further, by asking participants to perform a vocabulary learning task then asking them to reflect on a variety of vocabulary learning experiences and contexts, it was possible to both collect observational data on how the learners approach a learning task as well as elicited data primed by the learning task and explanation of what VLS are and how they are used.

Participants were asked to fill out a demographic survey (section 3.5.1.1), then engage in a training session with the researcher (section 3.5.1.2). The semi-structured interview questions (section 3.5.1.2) were intended to both collect further demographic and individual differences data, and to prime participants for elicitation of VLS use. The questions concerned participant experience with language study, their reasons for learning Swedish, methods and frequency of study, and their perceptions regarding the role of vocabulary learning in L2 study.

Participants were then given an explanation of what VLS are, what it means to use them in a variety of contexts, and were finally asked to perform a vocabulary learning task paired with a think-aloud protocol, which is detailed in sections 3.3.2 and 3.5.1.3. The interview then continued with more questions that asked participants to reflect on their vocabulary learning methods connected to variety of contexts (e.g. in the vocabulary learning task, in the classroom, at home, with others), whether they use VLS 'deliberately' or 'unintentionally' (see more on this distinction in section 3.5.1), their feelings on the usefulness of VLS, and VLS use in a specifically Swedish L2 learning context. Participants were thanked for their time, and the interview concluded.

Full transcriptions were written out for each interview, including notes taken by the interviewer concerning observed behaviors and actions made by the interviewee that were not able to be observed through audio alone. The resulting transcriptions were coded for mentions of strategic vocabulary learning by tagging sections of the text. More on the content-analysis process used on

this data to both tag and organize VLS appearing in this data pool can be seen in section 3.4.1. The semi-structured interview question list can be seen in the appendix, section 9.2.

3.3.2 Learning Task, Think-Aloud and Transcriptions

A vocabulary learning task with think-aloud procedure acted as an embedded feature within the semi-structured interview detailed in the previous section. A think-aloud procedure is characterized as asking participants to "encode [their] mental processes immediately after they occur and then take time to describe them to the investigator" (O'Malley & Chamot 1990:91) in order for the researcher to access covert mental processing while it is still accessible to the participant. Think-aloud protocol methods were inspired by their use by Barcroft (2009) in a study regarding VLS use and learning success are integrated into the learning task component. Barcroft's study asked students to learn new vocabulary through the use of learning material (word-picture pairs), then completed a posttest, and then answered interview questions regarding their strategy use. Think-aloud protocol allows for the interviewee to both gather observational data on the overt learning actions performed by the learner, but to also be granted a window into participants' own conceived strategic learning process, including reflections upon their meta-strategic regulation. The vocabulary learning task with think-aloud procedure was recorded and transcribed along with the entirety of the semi-structured interview it was embedded within (see section 3.5.1.3 for details on the transcription process).

The vocabulary learning task was designed with a two-fold purpose. First, by asking participants to learn new Swedish words, it would provide the researcher the opportunity to observe (and elicit through think-aloud) a range of VLS used in an on-line context to learn new word knowledge, then subsequently recall that knowledge. Second, the task would afford the opportunity for participants to activate memory of Swedish word learning experiences while reflecting on their own individual styles and approaches to Swedish word learning, priming them for the second part of the semi-structured interview. It must be noted, however, that although this process was formulated to stimulate the use and reflection of VLS practices for interview purposes, it also was likely to influence learners' 'normal' vocabulary learning processes. This influential effect is present in most social science research that asks learners to perform tasks or if an 'authoritative figure' (e.g. researcher) is present. As a means of controlling for this, the interview, task, and think-aloud were performed in tandem so that not *only* observed behavior stimulated by these events would

be available as collected data, but also information regarding participants' previous experience with, reflections on, and knowledge of VLS use.

Participants were trained for about 5-10 minutes on how think-aloud procedure is performed and given an opportunity to practice 'thinking-aloud' before the task was provided. They were encouraged to try talking about their thought processes while performing small tasks in order to get comfortable with the process, with the researcher intermittently prompting them to 'think-aloud', for example, during extended periods of silence. They were given learning materials to facilitate whatever learning strategies they preferred (see section 3.5.1.3), then were provided a list of 20 Swedish language vocabulary words to learn (section 3.5.1.3, appendix 9.2 and 9.3), and were finally given a two-way translation quiz intended to provide incentive for learning the words included within the task.

Full transcriptions of the vocabulary learning task with think-aloud procedure were included in the semi-structured interview transcriptions and were ultimately combined as a single data collection event.

3.3.3 The SVLSS and Likert-Scale Response

The central instrument of this research project, The Swedish Vocabulary Learning Strategy Survey (SVLSS), is a Likert-scale questionnaire that has undergone several iterations throughout its instrumentation and data collection processes. Likert-scale questionnaires have been widely used to gather data on learners' strategic learning approaches (e.g. Gu & Johnson, 1996; Oxford, 1990; Stoffer, 1995, etc.) due to its ability to conveniently collect large amounts of data on strategy use patterns from particular groups of students. This is usually accomplished through asking respondents to rate 'how true of them' a given statement is, or 'how often' they perform a strategy as represented by a written statement, then measuring the "cumulative deployment of certain strategic learning behaviors" to say whether or not a learner 'uses' the strategy (Gu, 2018:328). The exploratory studies that used the SVLSS, following aims set forth by this research project (section 1.3), sought out to collect large amounts of data on Swedish L2 learners' VLS use in order to establish a baseline of what VLS use patterns may exist in the investigated demographic, and to ground further research in this area for the future.

The SVLSS, in all iterations, was presented in both paper and digital formats to participants. Participants filled in the SVLSS in both in-class and out-of-class contexts, and had no prescribed time limit for completion. All participants were provided (either digitally or on paper) an informational letter explaining the research project that they were asked to take part in and providing

contact information for the researcher performing the study (see appendix section 9.4). The digital version is hosted online via the Google Forms survey platform. The front page of both the web-based and paper SVLSS 1.0 and 2.0 presents a mandatory check-box indicating that the participant agrees to having their anonymously submitted responses be used for research purposes, as well as a briefing on how to accurately fill out the questionnaire (see appendix section 9.9). A demographic survey (see section 3.5.1.1) that gathered data on learners' individual differences followed those introductory sections. The SVLSS VLS-based items span seven sections, each with 8-12 items in each section. The SVLSS, in several iterations, has ended by presenting voluntary open-ended questions (see section 3.3.4 for more on open-ended questions), then thanking the participant for their time and attention. A full copy of the SVLSS 1.2 and 2.0 can be seen in the appendix, section 9.7 and 9.8

Likert-scale data collected from SVLSS item responses was comprised entirely of ordinal numbers from 1-5 representing whether each item statement was 'Very untrue of me, Untrue of me, Neutral, True of me, or Very true of me'. Responses to these statements, therefore, represent scaled measurements of what respondents report that they *do* or *do not do* with regards to various forms of strategic vocabulary learning. Scale responses are not exactly measurements of how frequently participants use certain VLS, but rather, represent the extent of which participants wish to express that they perform a strategic learning behavior. It can be assumed that a 'very untrue of me' response represents that a participant does not perform a certain strategic behavior at all, where 'very true of me' represents common or preferred usage. What this data does not indicate, however, is *why* they do or do not use certain strategies. Those reasons have been shown to be significantly linked to the individual, the context in which they use an individual strategy, and the task at hand being addressed through strategy use (see section 2.2.3). As questionnaire item statements in the SVLSS (and other VLS use surveys) cannot account for the granular context-specifics related to the use of each individual learning strategy, item responses are considered to represent whether or not participants use VLS in their own personal vocabulary learning experiences, and thus 'very true of me' responses also assumedly connotate that context-embedded situations in which this VLS is useful or appropriate frequently occur for the respondent (and vice-versa for the 'very untrue of me' respondent).

All participant responses to each SVLSS VLS use item were collected into comprehensive data sets that included participant demographics reflected in nominal data groups (age, Swedish language proficiency, highest educational degree, degree of multilingualism, time spent studying Swedish, time spent in Swedish language environment), and other relevant categorical data (native language(s), other language(s) spoken, main approach(es) to studying

Swedish). These data sets were analyzed using a variety of methods explained in detail in section 3.4.3.

Since no questionnaire built expressly for collecting VLS data on adult, beginner Swedish L2 learners existed (section 2.2.3.4), and other VLS questionnaires at the time were not suitable for adaptation to the context, the SVLSS was constructed and developed to be used in the specific context of adult, beginner Swedish L2 vocabulary learning in Sweden. A detailed history of the SVLSS design, evaluation, and re-constructions can be viewed in section 3.5.2.

3.3.4 The SVLSS and Open-ended Response

As a means of exploring areas of interest adjacent to learners' reported VLS use, open-ended questions with corresponding response blanks were appended to the SVLSS, inviting participants to provide information in written text. The open-ended question format was chosen to collect qualitative data without restricting participants response to the questions raised.

The SVLSS 1.0 and 1.1 included one open-ended questions at the end of the questionnaire. It read:

> "What other strategies do you use for Swedish vocabulary learning not listed here? Feel free to list your answers."

The SVLSS 1.2 included an open-ended question at the end of the questionnaire. It read:

> "What do you think it means to 'know a word'? What information is important for that word to be 'known'?"

The open-ended question regarding what other strategies participants may use was included as a piloting instrument to collect feedback on potential VLS gaps that may have existed in the SVLSS 1.0 and 1.1 item lists. The open-ended question asking participants to respond to what it means to 'know a word' for them was included as a supplemental means of collecting qualitative data on what adult, beginner Swedish L2 learners consider important as word knowledge. This data was collected with the intention to perform an exploratory investigation into what patterns may exist with regards to the aforementioned demographic's beliefs on what word knowledge features are most important for 'knowing a word'. Results of this exploratory study can be seen in article IV, and in section 4.4.

All open-ended questions were voluntary, and not all participants chose to respond to them. This feature was decided since most questions came at the end of a relatively long questionnaire and forcing participants to respond to open-ended questions under questionnaire fatigue may have resulted in less reliable responses. The text-based, qualitative data collected from these responses were entered into a database and disseminated using bottom-up content analysis in order to quantify some elements of each data set, as well as explore emergent themes and patterns. The separate analyses performed are detailed in section 3.4.2.

3.4 Analyses Performed

In order to disseminate, interpret, and re-apply findings from collected data throughout the project, certain analyses were chosen and performed according to the type of data collected, and the motivating intentions behind each study. Reasoning behind the chosen analyses, the data sets that they were performed on, and the performed analysis procedures are presented in this section.

3.4.1 Content Analyses

Two content analyses have been performed on collected data throughout this research project. The first analysis was performed on transcriptions garnered from the semi-structured interview and vocabulary learning task with think-aloud procedure (article I). The second was performed on the text-based fill-in-the-blank responses gathered from SVLSS 1.2 participants regarding what they believe it means 'to know a word' (article IV). The procedures used for these analyses will be described below.

3.4.1.1 Interview and Task Transcription Analysis

Full transcriptions from 13 participants were the subject of a content analysis that sought to document instances of strategic behavior for the purpose of learning vocabulary. Instances of 'strategic behavior' were defined as "activities consciously chosen by learners for the purpose of regulating their own language learning" (Griffiths 2013:15), but needed to be related to learning Swedish vocabulary, specifically. Instances were coded from two sources in transcription text: *elicited text* that resulted from the participant describing strategic behavior

during the interview or think-aloud task, and *observation text* that may have come in the form of interview notes, transcribed actions during interviews and task-completion, or from transcriptions of participants describing what they were doing during vocabulary learning. Coding and analysis were performed manually over three stages: initial coding for instances of strategic behavior, axial coding to find relationships (similarities and differences) between initial coded instances, and selective coding to combine alike behaviors and delete outliers to arrive at a final list of discrete strategic approaches used for vocabulary learning.

Instances of strategic behavior were also tagged as 'active' or 'meta'. The 'active' tag refers to strategic behaviors intended to directly reinforce retention and recall of lexical knowledge through what are typically referred to as 'cognitive strategies'. The 'meta' tag refers to behavior related to reflecting, planning and self-regulating one's vocabulary learning that are likely to influence choice, use and effectiveness of 'active', or 'cognitive' strategies. No other classification was initially appended to the instances of strategic behavior coded as to avoid possible analysis bias, and to establish a 'bottom-up' approach to content analysis (Mackey & Gass 2012). Grouping of emergent strategic instances during the axial and selective coding stages was based loosely on other VLS classification systems (Gu & Johnson, 1996; Schmitt 1997) in order to provide a level of structure to final coding rounds. As such, this method is not a 'pure' form of bottom-up content analysis (i.e. grounded theory), but borrows from such practices in order to facilitate organization and interpretation of collected data. The figures below are included to illustrate examples of tagging for strategic behavior (figure 3), organization of VLS into axially-related groups (figure 4), and finally combining conceptually similar strategic behaviors into a single VLS (figure 5).

[2:33 – 3:45, Describe Learning task, eliminate known words, model task]

P1: Ok, *förenkla*, simplfy. *Hur kan man förenkla deras liv*. M'hm. Related words... *förbettra*...
I: Oh, and I forgot to mention. They are flashcards.
P1: Oh!
I: If that helps in any way.
P1: Yeah, maybe, most of times, I use writing as a method to remember things.... *Förenkla*... [rereads sentence]. Ok. I think I'll go to the next one.
I: Ok.
P1: *Blänka*, oh, it's like to shine, to twinkle... um,, Alltid på times square ... M'hm,, So it resembles a bit 'blink', but it means 'shine'... mm,, yeah. *Blänka*. [Speaking to self quietly],, and it's a verb. Okay. *Blänka*... *förenkla*,, *blänka*... Ah, I'm not sure if I'm doing it right,,
I: Oh, there's not right way to do it at all. It's completely up to you.
P1: Alright! *Osynlig*... invisible. [Reads sentence to self]. Um...

Figure 3: *Initial Coding Stage: Strategic Behavior.*

I think vocabulary, in general, is important for a language	Self-regulating motivation for learning through beliefs/attitudes	Meta
Ok, *förenkla* , simplfy.	Memory: Repeatedly reading word(s) out loud	Active
Hur kan man förenkla deras liv.	Reading sentences out loud to help remember specific words	Active
M'hm. Related words... förbettra...	Associating other words in the TL to the new word	Active
I use writing as a method to remember things	Memory: Repeatedly writing word(s) down	Active
[rereads sentence].	Reading sentences out loud to help remember specific words	Active
Förenkla...	Memory: Repeatedly reading word(s) out loud	Active
So it resembles a bit 'blink', but it means 'shine'... mm.. yeah. *Blänka ...*	Associating cognates to help remember a word	Active
[Speaking to self quietly] .. and it's a verb.	Organizing words [or groups of words] by word types [adj., verb., etc.] to learn	Active

FIGURE 4: *Axial Coding Stage: VLS Class, Active/Meta.*

Noting unknown words (common or novel/important) encountered to review later				
	Writing down unknown words encountered to review later			
	Taking note of commonly encountered unknown words and marking them as important to learn			
	Noting unknown words encountered as needing to be learned			
	Noting novel/important words and trying to learn them			

FIGURE 5: *Selective Coding Stage: Combining Alike Behaviors.*

Results from this content analysis procedure can be found in article I and in section 4.1.

3.4.1.2 Open-ended Question Response Analysis for SVLSS 1.2

A content analysis was performed on 111 open-ended text responses to the question,

> "What do you think it means to know a word?
>
> What information is important for a word to be 'known'?"

Using bottom-up approach to content analysis (Mackey & Gass 2012) similar to that used in article I (see previous section), the intent of the analysis was to document each mention of word knowledge in responses, and then to determine which category of word knowledge each mention might refer to according to Nation's (2013) *form, meaning* and *use* framework for vocabulary knowledge. Three stages of manual coding were used to disseminate response text. An initial coding stage was used to tag all mentions of word knowledge features in respondent text, an axial coding stage then grouped each mention into corresponding word knowledge categories, another axial stage broke down the word knowledge category of each mention into word knowledge sub-categories, and a final axial stage broke sub-categories down further into word knowledge features, further describing what knowledge is 'important to know a word'.

During the axial coding for patterns of sub-categories, similar responses that were deemed representative of the same feature of word knowledge were combined into a single 'knowledge feature' grouping. For example, the category, *Form* > *Spoken* > *'Pronunciation'* was populated with responses that included mention of form-based phonetic knowledge. Responses may have been as simple as a single word expression (e.g. "Pronunciation"), may have represented base word knowledge (e.g. "To know all of the word's […] pronunciations"), or may have represented task-based knowledge specific to pronunciation, (e.g. "I should be able to pronounce it", "[I know it] when I can understand pronunciation of that word"). This process was performed twice for all coded responses – once during initial axial coding, and again to ensure best fit and appropriateness of first round coding (article IV). An example of the coding process is presented in table 9 below, illustrating raw response text from a participant, tagging it for knowledge features, and their classification into knowledge categories and sub-categories.

Table 9: *Response Coding Example (article IV).*

Raw Text Response: (Participant 24)	**"Knowing the context the word is used in (1), knowing the meaning (2), and also being able to put it in sentences (3)."**		
	KnowledgeCategory	Knowledge Sub-category	Knowledge Feature
Feature (1)	Use	Constraints on Use	Can use appropriately in context(s) ['Context']
Feature (2)	Meaning	'General Mention'	
Feature (3)	Use	Grammatical Functions	Can use word in a sentence ['Can use in sentence']

Results from this content analysis procedure can be viewed in article IV and section 4.4.

3.4.2 Questionnaire Data Analyses

A variety of approaches to handling the data collected by the SVLSS were used in analyses and measurements relating to VLS use patterns, differences across groups, and to instrument reliability and validity evaluations.

3.4.2.1 Internal Consistency, Cronbach's Alpha

A Cronbach's alpha coefficient of reliability can be applied to Likert-scale questionnaire item lists in order to evaluate their level of internal consistency, or how closely related the individual items are to the group they are consistent of (Goforth 2015). Cronbach's alpha is used to measure the internal consistency of categorical item lists in the SVLSS throughout its stages of instrumentation (for findings see section 3.5.2).

The alpha coefficient for item groups evaluated will return a number > 0 and < 1, with a coefficient between 0.65 and 0.85 generally considered 'acceptable' levels for internal consistency in scientific application (Goforth 2015), assuming that the items in question are meant to tap into the same underlying construct. The Cronbach's alpha coefficient will rise with higher average inter-item correlation but will also rise by simply raising the number of items involved in the measurement.

A Cronbach's alpha cannot measure dimensionality of underlying constructs, and therefore does not measure uni-directionality of an item list. Dimensionality requires statistical analyses, such as an exploratory factor analysis, described below.

3.4.2.2 Exploratory Factor Analysis

Exploratory factor analysis (EFA) is a statistical tool that is often used to explore the dimensionality of underlying constructs in questionnaire item lists by reducing the number of variables under consideration to obtain a set of principal variables, usually interpreted and expressed as construct-related categories. In SLA strategy research, EFA has been used to evaluate construct validity for several instruments used to investigate LLS and VLS use such as the SILL (Park 2011), the VOLSI (Stoffer 1995), and the VLQ (Gu 2018) (see section 2.2.2.1 for more on the SILL and section 2.2.3.2 for more on the VOLSI, and VLQ). EFA is explicitly used for exploratory investigations into construct models underlying data collection instruments, and, "…should not be used, as many researchers do, in an attempt to *confirm* hypotheses or test competing models" (Osborne 2014:6).

EFA used in this project (article II) is performed using principal axes factor extraction with varimax rotation. These settings allow for a choice of initial estimate of communality coefficients with principal axes factor extraction, and varimax rotation maximizes the variance within an extracted factor, making larger loading scores larger, and smaller scores smaller (Osborne 2014). This setting was chosen as it was assumed that the item list for the SVLSS 1.2 would

not neatly divide into easily recognizable factor groupings, and would return smaller correlations between factor. To achieve the best possible illustration of the constructs underlying the SVLSS instrument through EFA, the orthogonal rotation was chosen to amplify robustness of factor loadings.

The number of factors chosen for extraction and retention in this project used Scree testing, or examining a graph of eigenvalues and "looking for a natural bend or 'elbow' in the data where the slope of the curve changes markedly […] The number of data points above the 'elbow' is usually considered a good estimate of the ideal number of factors to retain." (Osborn, 2014:18). Following EFA factor extraction and rotation, all items (components) are scored with regards to their loading onto the accepted number of factors. A rotated component matrix can then be read to evaluate loading values and assess each questionnaire item with regards to its contribution to the factor constructs. Often, score values below 0.3 are considered too low to indicate 'good fit', with numbers over 0.6 indicating a strong relationship between item and factors. Eigenvalues are column statistics that reflect the overall factor loading scores, and as extracted and rotated describe the percentage of variance that each (and overall) extracted factors explain (Osborne 2014:10).

It should be stressed that EFA does not indicate nor confirm causality between item variables on an instrument and the factors that they load onto. Nor does EFA provide suggestions as to the nature of a factor construct once analysis has been run – this is interpretive work performed on the part of the researcher, and is a largely subjective process that is guided through the exploratory organization of correlative information facilitated through EFA.

Further, a certain amount of data points is generally recommended for EFA to provide an appropriate evaluation. Suggestions have been raised arguing for sample-to-variable ratios requiring 10 cases per variable (Garson 2008) to 20 cases per variable (Hair, Anderson, Tatham & Black 1995) as minimum sample sizes for performing EFA, otherwise results may be skewed or will not provide an accurate representation of item-factor relationships. This is even more relevant if an instrument represents a complex factor structure with constructs that overlap in theoretical grounding (e.g. classes of vocabulary learning strategies) or if collected data is noisy or diverse (e.g. learners with diverse language learning backgrounds).

EFA is used in this project to help provide guidance with regards to two important facets of instrumentation. First, it is used to show statistical relationships between items on the SVLSS in order to guide determining dimensionality of VLS constructs, and to establish classification groups on the instrument (see section 3.5.2.2 and 4.2 for more). Second, the statistical relationships revealed by EFA are used to guide appropriate fit and potential for deletion of SVLSS items during instrumentation (see section 3.5.2.3.1 and 4.2

for more). EFA in this project was performed using IBM's Statistical Package for the Social Sciences (SPSS) software.

3.4.2.3 Analysis of Variance

Analysis of variance (ANOVA) tests were performed using VLS categories (groups of items) taken from the SVLSS as dependent variables, and participant responses to the items in these categories were grouped into factors according to demographic variables (e.g. age group, education level) in report I. The ANOVA test is used to compare means from independent groups in order to determine if there is no statistically significant difference (a null hypothesis), or if the difference between means is statistically unequal (accept hypothesis) (Howell 2011). The alpha level used most widely in social science significance tests, and which is used here, is set at < 0.05, which indicates that there is more than 95% probability that difference between means is not a random finding.

Independent groups can be determined either by dividing a larger population into smaller subgroups according to a certain variable. For example, in this project, SVLSS participants were broken into groups according to age group, Swedish proficiency, and so on, in order to examine the mean reported VLS use (divided into the 6 categories of VLS in the SVLSS 1.2 and 2.0) of those groups (see report I and section 4.5). However, ANOVA testing will not provide details as to *which* of these groups report significantly different VLS use – only that differences exist. In order to examine differences between groups, Tukey HSD post-hoc tests are used. Here, again, a < 0.05 alpha level is set in determining the significance of various VLS category use means per demographic factor group.

3.4.2.4 Cluster Analysis

A two-step cluster analysis is performed as a part of report I in order to investigate possible Swedish L2 learner profiles with regards to demographic variables and reported VLS use data from the SVLSS 2.0.

Cluster analysis can be used to aggregate data and reveal patterns with regards to cases included (in this project, participants), and variables related to each case (e.g. VLS use, demographic information), resulting in sub-groups that share certain variable characteristics in common. Cluster analysis, like EFA, is a statistical analysis tool that should be used to help guide interpretations of data and not treated as a tool that offers high-stakes confirmatory findings (Norušis 2012).

A two-step cluster analysis procedure is a useful approach when data is both categorical and continuous, and when a data set is quite large, and is the type of cluster analysis utilized in this project. Application to this type of data is appropriate due to a forgiving clustering algorithm based on a log-likelihood distance measure (between cases) that relies on, but does not require, independent variables, continuous variables having normal distribution, and categorical variables having multinomial distribution (Norušis 2012). These data are formed into preclusters used in place of raw data in order to agglomerate all information, then are clustered hierarchically, combining groups of similar data iteratively, until all groups become one.

The results of two-step cluster analysis performed in this project can be seen in section 4.5 and in report I.

3.5 Stages of Instrument Development

In section 3.3, reasoning for the choice of certain instruments is presented, as is the final version(s) of the instruments chosen, and the type of data collected by each. Section 3.4 describes the analyses performed on that collected data. As a function of addressing the aims of this project that seek to provide a transparent illustration of instrument design, creation and development, this section will present the instrumentation steps and decisions made during the processes performed for each instrument used in this project.

3.5.1 Interview and Vocabulary Learning Task

The semi-structured interview and vocabulary learning task with think-aloud instrument (section 3.3.1 and 3.3.2) was developed in order to collect qualitative self-report and observational data on learners' VLS use in the Swedish L2 learning context. The instrument was designed, piloted and distributed during winter 2014 and spring 2015.

The instrument included three main parts: a demographic survey, a semi-structured interview concerning the participants' use of VLS for Swedish L2 learning, and a vocabulary learning task that was embedded in the interview. The demographic survey was included in order to collect background information on all participants with regards to age, known languages, Swedish language experience, experience learning other languages, and educational background. The semi-structured interview was chosen to collect self-report information on a wide range of VLS used by participants in a variety of con-

texts. The embedded vocabulary learning task was used in order to provide a clear example of VLS use through a clear learning task with objective, to activate participants' knowledge of VLS use and usage, and to create an opportunity to observe VLS use during learning[12].

3.5.1.1 Demographic Survey

The demographic survey was updated twice during piloting, resulting in the final version used for data collection in article I. Pilot version 1.0 included a statement and check-box drafted with the intention of informing participants of how their data will be used and asking for their agreement to use their data in future research and publications. Open blanks were provided for participants to give information on their age, nationality, area of study, highest degree, first language, language spoken at home, second language(s), and length of Swedish L2 study. A section asking students to circle their self-assessed CEFR-level proficiency in Swedish was provided, and a final open-ended question asking the participant's primary motivation for learning Swedish.

After piloting, the demographic survey was revisited according participant feedback, resulting in version 2.0. The introductory statement was updated to reflect the fact that an informational letter outlining the study aims was provided to participants (see appendix section 9.4), and that a vocabulary learning task was involved in the interview. Blanks were provided to answer to age, area of study, highest level of education, and first language. However, 'languages spoken at home', and 'second language(s)' were replaced with, 'Other languages spoken (not Swedish)', proficiency and time spent speaking them' accompanied with a list of blanks under each heading. This change was performed in order to collect more detailed information on participants' language use and learning backgrounds, as well as provide an open space to express their multilingualism. With regards to collecting more information on language background, two questions were added, 'How long have you studied Swedish as an L2?' and 'How long have you been exposed to Swedish?'. Both questions asked participants to respond in months for ease of data formatting. Proficiency and motivation fields were left the way they appeared in version 1.0.

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12 Other forms of observational data collection may have included classroom observation or use of learning journals. An 'abbreviated' observational event was decided upon at the time as this study was intended as a stepping stone towards populating a questionnaire item list, and the amount of data collected after interviews and learning tasks was considered suitable to address said purpose.

3.5.1.2 Semi-Structured Interview

The pilot version of the interview and learning task was designed using the guiding methodological principles from O'Malley and Chamot (1990) with regards to elicitation of LLS data. Responses were coded to identify different strategies used. The pilot interview script 1.0 included 17 interview questions that were broken up into three sections. The first six opening questions concerned participants' language learning background, Swedish learning, study methods, frequency of study, and the importance of vocabulary learning. This line of questioning was intended to ease the participant into the interview by talking about some topics they had just written about in the demographic survey and to introduce the topic of vocabulary learning in their specific Swedish learning contexts, while still establishing a back-and-forth of question and answer.

After these questions, the vocabulary learning task (see next section) was administered. Following the task, a small section of four questions was posed asking participants to describe the methods they used to learn the vocabulary in the task, why they used those methods, what their ideal method would be for learning vocabulary, and why it would be ideal. A brief explanation of what VLS are followed this set of questions (which can be viewed in appendix section 9.2), then a final set of seven questions was posed. The final set of questions was aimed at exploring participants' Swedish learning experiences with regards to their VLS use. Questions asked what kinds of VLS they use, what kinds of direct and indirect VLS they use, what kinds of VLS they wish they used, which VLS are most/least important for Swedish learning, and if they had any other personal experiences in VLS use to share.

Six rounds of written revisions were performed on the interview script in order to make questions more succinct, but with intentions to gather as much information as possible from participants regarding their VLS use. The final interview script (appendix section 9.2) involved 20 questions broken into three sections following the pilot version's original structure: seven before the learning task, two directly after, and eleven after an explanation of what VLS are. The first section of questions was largely unchanged, but with two exceptions. First, the question of the importance of vocabulary learning was placed on a 1-10 scale in order to elicit more detailed expressions of participants' feelings on vocabulary learning. If vocabulary learning is of low importance, knowing this early on might help the interviewer shift the conversation on VLS into a way that might be more salient to the interviewee. Second, an extra question was added asking participants what their motivation for studying Swedish is. This was another item that was lifted from the demographic survey and added to the initial set of interview questions instead, in order to make participants feel more confident in talking about their own language learning.

The second group of questions was shortened from four questions to two. With the think-aloud protocol used during the vocabulary learning task, it was superfluous to ask participants to describe the methods just used to complete the task. However, questions regarding participants' reasons for using those methods, and what their ideal methods for vocabulary learning were retained in hopes that the participant would discuss other VLS methods they have tried or heard about in their language learning experiences. The final group of questions were amended mostly by adding several questions regarding various learning contexts that had been common topic deviations during the pilot interviews. Questions regarding participants' use of VLS in classroom settings, home settings, and when studying with others were added, as well as a question asking if participants thought any VLS they used were specific to learning Swedish vocabulary. Also, influenced by the work of Oxford (1990), Schmitt (1997), Lawson and Hogben (1996) and others concerning direct/indirect, active/meta, deliberate/unintentional nature of vocabulary acquisition, it was decided to investigate which strategies participants believed to be 'deliberate' and which were 'unintentional'. These labels, though problematic as performing strategies unintentionally is impossible due to the nature of strategy (Griffith 2013; Macaro 2007), were actually representative of what is more recently referred to as 'strategies', or intentionally-performed and goal-oriented behaviors, and 'meta-strategies', or planning and regulation of strategic behaviors, motivations, and emotions (Oxford 2017). Though terminologically problematic, interviews did not suffer from this line of questioning – in fact, these questions usually prompted only more detailed discussion of VLS varieties used by participants during interviews.

3.5.1.3 Vocabulary Learning Task and Think-Aloud

The vocabulary learning task experienced a great deal of change between its pilot version and the final version. The pilot version of the vocabulary learning task involved a short, scripted explanation of the task at hand to be read by the interviewer to the interviewee (appendix section 9.2). It involved presenting a list of 20 Swedish words with English translations. The words were selected from the vocabulary glossaries of B1 and B2 level Swedish L2 textbooks (Rivstart B1; Rivstart B2). These words were chosen to be accessible to A1-A2 Swedish learners. Of the 20 words, seven were nouns, seven verbs, and six adjectives. The words were presented to participants in three forms: one list of the Swedish words with English translations, one list of only the Swedish words, and as cards (more on this below). Participants were asked to mark any words that they already 'knew', which was at their own discretion. Those words were

omitted, then the participant was given five minutes to learn the meaning of the words and were told that they would be quizzed on them afterwards. After five minutes, a randomized list of the studied words (in alternating translation directions) with blanks was given to the learner, and they were asked to write down as many answers as possible. The interview then continued, asking them questions about their learning and recall techniques. The word quiz was not graded as it was simply a means with which to raise the stakes on learning the new word list and gave participants a chance to use VLS that included recall instead of simply focusing on retention.

Several aspects of the task changed between the above pilot and the final version used for data collection. For one, it was decided to use a think-aloud protocol (defined in section 3.3.2) in order to access participants' on-line, strategic learning processes during the task. This choice was made after pilot sessions revealed that many participants were able to learn the words in the task using a variety of VLS but found it difficult to express *how* they learned them after the fact. A think-aloud training script was added to the learning task, explaining how to think-aloud, providing a model of thinking-aloud, asking the participant to try thinking-aloud, discussing any issues, and then moving on to the vocabulary task itself. Participants were encouraged to think-aloud during study of the new words, as well as during recall when taking the word quiz.

In two instances of the pilot interviews, participants had already encountered over half of the words on the provided list. As a response to this, two different word lists were generated in the event that one was too well known prior to the vocabulary learning task. Also, after consideration, it was decided to provide participants more learning materials, and were asked to learn the words however they wished and at their own pace, so that they might be able to more readily use whatever VLS they are most comfortable or familiar with for word learning during the task. Word cards (appendix 9.3) were made and provided for each word on both lists. Each card had a variety of word knowledge features on them, including a headword on one side, and a variety of word knowledge features related to the headword on the opposite side. All cards presented the word type, English translation(s), a sample sentence in Swedish[13], and related words in Swedish with English translations. Noun cards showed the headword in its indefinite form with corresponding *en*/*ett* article. Verb cards presented the present form of the headword. Examples of lists and word cards can be seen in appendix sections 9.2 and 9.3. In addition to the word cards, partici-

13 Sample Swedish sentences were extracted from the KORP corpus database of native online Swedish language use. These sentences were checked for readability by a Swedish language instructor, and in some cases slightly modified to suit A1-A2 level Swedish learners.

pants were told that they were provided with paper, pens and pencils, markers, index cards, a computer, and an audio recorder with which they could study the words if they so wished. They were also told they could study the words for as long as they would like in order to maximize the amount of VLS use elicitation provided.

As incentive to learn the words, participants were told they would be quizzed on their learned word knowledge after they felt ready. The quiz included Swedish and English translations of the words studied (from alternating directions), and blanks to write whatever corresponding word knowledge they could recall. The participants were also asked to think-aloud while trying to recall word knowledge during the quiz in order to facilitate elicitation of VLS for remembering and using word knowledge. These responses were centered on the strategies that participants considered most effective for accomplishing the vocabulary learning task at hand, but could also be used to explore other similar (or non-similar) strategies that they did not use, but know of. Quizzes were not graded, rather, they were used exclusively as learning incentive, and as a tool with which to continue the semi-structured interview, guiding questions concerning how participants remembered word knowledges, and why they used the approaches they used, etc. The think-aloud training guide read to each participant can be viewed in appendix, section 9.2.

3.5.2 The Swedish Vocabulary Learning Strategy Survey

The data collected from the semi-structured interviews with vocabulary learning tasks was analyzed and used to populate the item list for a new questionnaire designed using data regarding Swedish L2 learners' VLS use. This data-driven instrument could then in turn be used to collect more expansive and organized self-report data concerning Swedish L2 learners' VLS use on a large-scale basis. The purpose of creating a new questionnaire during this project was four-fold, following the guiding principles of this research project. These purposes were centered on the development of:

1. An instrument made with the intention to gather self-report data on adult, Swedish L2 VLS use did not exist prior to this project, offering an opportunity to create a new instrument with which to perform exploratory research to establish a foothold in the area.
2. An instrument that holds value for Swedish L2 language instructors for diagnostic, reflective, and informative practices, and that can easily be explained and distributed to teachers and learners for in the language classroom (Section 5.5).

3. An instrument that is ultimately organized through a vocabulary learning strategy classification system that is representative of strategic learning approaches reported on by the target demographic that it is intended for distribution to.
4. Instrumentation practices that are self-aware, and that attend to the lack of reporting on detailed levels of transparency in instrument design and validation processes that has been seen in past VLS questionnaire research (Article III & Section 5.1).

This section reports on the instrumentation process for the SVLSS instrument, and is divided into four separate stages. First, efforts and reasoning included in the preliminary VLS list that was used to populate the SVLSS 1.0 are reported, followed by a section on the piloting process for the SVLSS (1.0, 1.1), and then a section reporting on findings and revisions performed regarding the SVLSS 1.2. The final section describes methodological and theoretical reasoning behind revisions leading to the SVLSS 2.0, and what exactly those revisions entail. Table 10 below provides a helpful illustration of these stages, their purposes, procedures, and results. Figure 6 illustrates the chronological progress of this instrumentation process.

Table 10: *Instrumentation Process for the SVLSS.*

Stage	**Purpose**	**Procedure**	**Results**
Initial VLS List	Establish VLS list elicited/observed from intended demographic.	Semi-structured interviews with vocabulary learning task transcribed and analyzed.	VLS list converted into questionnaire items as VLS use statements.
SVLSS 1.0	First round of piloting for readability, missing or irrelevant VLS items in list.	Teacher and colleague feedback. One-on-one informal feedback sessions with participants.	VLS list statements revised for readability, items added/deleted, demographic survey amended.
SVLSS 1.1	Second round of piloting for readability and clarity, missing or irrelevant VLS items in list, internal consistency.	One-on-one informal participant feedback, questionnaire response data.	VLS list statements revised mostly for clarity, items combined/added, internal consistency acceptable.

SVLSS 1.2	Third round of piloting for readability and clarity, internal consistency, and investigation of factor structure.	Questionnaire response data.	Preliminary classification of VLS items guided by EFA. VLS items revised according to clarity and factor analysis results.
	VLS classification system evaluated with regards to VLS taxonomy.	Meta-analysis of Fan, 2003; Gu & Johnson, 1996; Schmitt, 1997; Stoffer, 1995; SVLSS 1.2.	VLS items revised according to VLS taxonomy constructs, resulting in SVLSS 2.0.
	Perform preliminary reliability and validity evaluations of SVLSS 2.0.	CFA and Cronbach's Alpha, questionnaire response data.	Good reliability of VLS categories. Inconclusive results regarding VLS taxonomy validity.
SVLSS 2.0	Establish preliminary VLS use findings for adult, beginner Swedish L2 learners.	Questionnaire response data.	VLS use with regards to demographic groups and learner profiles.

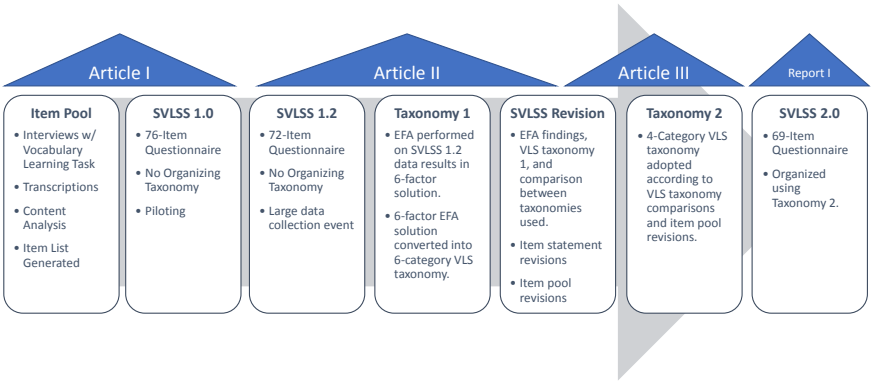

Figure 6: *SVLSS Development Timeline.*

3.5.2.1 Establishing the SVLSS 1.0

When initially approaching the instrumentation for the SVLSS, several methodological approaches to questionnaire design and development were examined, such as Gu and Johnson's (1996) VLQ, Schmitt's (1997) VLS taxonomy, and Fan's (2003) VLSQ (described briefly in section 2.2.3.2). Most of these instruments, though reporting varying levels of depth regarding their in-

strumentation processes (see article III and section 4.3), assumed some kind of an *a priori* VLS taxonomy to structure their questionnaires with, either populating their item list using learner and instructor input then adjusting items according to the chosen taxonomy (e.g. Schmitt 1997), or by using their chosen taxonomy to procure the item pool themselves (Fan 2003; Gu & Johnson 1996). Stoffer (1995), however, used a bottom-up method that included surveying learners and colleagues for vocabulary learning strategies, transferring this list into her questionnaire item pool without structuring them into a predetermined taxonomy, and letting the analysis of participant data guide the organization of her questionnaire items into groups of similar strategies. Though not without potential issues owing to the exploratory nature of this approach to analysis and interpretation (i.e. Petrić & Czárl 2003), Stoffer's bottom-up questionnaire development offers a path towards creation of a data-driven, context-derived instrument, made for (and using data from) a specific target audience in their context. As such, her instrument creation methodology was largely influential in the development of methods used in this project with regards to the bottom-up directionality used in constructing the SVLSS and interpreting its underlying construct structure.

The content-analysis results from article I provided the initial piloted item pool for the Swedish Vocabulary Learning Strategy Survey (SVLSS). The VLS list from article I was organized into loose categories based on previous VLS taxonomy research (Gu & Johnson 1996; Schmitt 1997) in order to inspect the list for redundant or inappropriate (e.g. non-strategic) VLS items, presented in section 3.5.2.3. However, no explicit classification system was applied to the VLS list for the SVLSS 1.0. This was a conscious decision intended to first produce an instrument that was influenced as little as possible by other instruments outside of the specific Swedish L2 vocabulary learning context before reaching evaluation stages regarding validity, reliability and comparative analysis of other VLS questionnaires (article II and article III).

The initial SVLSS 1.0 list was cross-checked by a Swedish L2 instructor and by colleague researchers in Swedish as a second language to gauge for any missing items and to convert overly contextual items into more general statements regarding VLS usage. Some wording was changed, but the item list was not amended at that time. The resulting VLS list populated the first iteration of the SVLSS (1.0) by converting the VLS list into 76 items written as statements concerning different types of VLS. Participants could respond to these statements, indicating to what degree each statement reflected their own vocabulary learning approaches.

Possible responses were set in a Likert-style scale for each item ranging between 1 (Very untrue of me), 2 (Untrue of me), 3 (Neutral), 4 (True of me) and 5 (Very true of me). This scale results in the collection of ordinal data

and should not be treated as interval data since the intervals between each response are not quantifiably equal (Gu 2003). The five-point scale was chosen due to its common use in Likert-scale questionnaires in SLA research, thereby offering up comparability between methods used in other SLA questionnaire studies and those used in this project (e.g. Fan 2003; Gu & Johnson 1996; Stoffer 1995). Further, the Likert-scale questionnaire style allows for efficient collection of large quantities of ordinal data that can be coupled with demographic information for each participant. This data set can be viewed and interpreted on the individual case level, whole population sample level, or in groups defined by certain variable responses (e.g. age groups, Swedish proficiency level). Qualitative approaches to data collection (e.g. observation, interview) would have been appropriate for collecting case study data on VLS use (as used in article I) but are not conducive to collecting large amounts of data that is intended for quantitative analysis and interpretation. Such was the intended purpose for the SVLSS instrument.

A demographic survey accompanied the SVLSS 1.0 that was largely based on the demographic survey used for the interview and vocabulary learning task instrument (see section 3.5.1.1).

The SVLSS 1.0 was measured preliminarily for readability. Readability measurements were performed using two tests designed to evaluate readability of English texts related to average reading skills for grade-level and age. The Flesch Reading Ease (FRE) test uses a formula for determining readability of a text with mathematical comparisons between sentence length and total amounts of words, and between total syllable count and the total amount of words (Flesch 1948). The Automated Readability Index (ARI) uses a formula that compares the number of letters and numbers in a text to the total number of words in that text, as well as the number of words in a text to the total number of sentences in that text. The FRE score for the SVLSS 1.0 was 51.8, indicating a fairly difficult level of readability (approx. grade 12 reading level). The ARI score was 7.9, indicating a reading level for about an average 13 to 14-year-old native English speaker. These scores were relatively high for the audience of the SVLSS, and their improvement became a subject of the piloting process.

The SVLSS 1.0 underwent three piloting sessions with the purposes of receiving one-on-one participant feedback on questionnaire readability, pertinence and missing items (SVLSS 1.0), measuring revised item statements for readability and internal consistency while receiving another round of feedback from participants (SVLSS 1.1), and to investigate the underlying constructs of the instrument item list in order to establish VLS categories included (SVLSS 1.2; article II). These findings are reported on in detail in the following section.

3.5.2.2 SVLSS 1.0 and 1.1: Pilot Results and Revisions

The SVLSS 1.0 was piloted with (N = 28) adult, beginner Swedish L2 learners. One-on-one informal interviews with participants following questionnaire engagement were used to collect feedback from participants concerning the demographic survey, statement readability, and VLS redundancy. An open-ended question at the end of the SVLSS (1.0 and 1.1) probed for other VLS that participants may perform for Swedish L2 vocabulary learning, but which were not displayed on the instrument. Interview notes taken by the researcher and collected responses to the SVLSS 1.0 instrument comprised the data used for revising readability, the demographic survey, and the item list.

Several participants indicated issues with readability, as expected from the initial FRE and ARI scores (see previous section). For example, participant three (P3) indicated a feeling that,

> *"Some questions are far too English advanced. They need to made more accessible for L2 speakers."*

Others noted that some words were vague in their meaning, for example,

> *"What is meant by 'creatively?" (P5)*
>
> *"…unless students are particularly familiar with what some of the terms are, maybe clarify the terms. Furthermore, it is maybe useful exemplify what is meant by certain terms, like that flashcards are index cards with word info on them." (P5)*
>
> *"… the questions were sometimes a bit tough to understand, where there were no examples given." (P7)*
>
> *"Confusing with some 'technical' terms." (P10)*

Using FRE testing, statements in the demographic survey and VLS list were revised to shorten sentences where possible, minimize jargon, and describe with better detail how listed VLS are used.

Table 11: *Examples of Adjustments made for Readability.*

SVLSS 1.0	**SVLSS 1.1**
When learning Swedish vocabulary, I repeatedly read words out loud.	When learning Swedish vocabulary, I read words out loud over and over.
When learning Swedish vocabulary, I associate sound features to vocabulary.	When learning Swedish vocabulary, I try to remember words by the way they sound.

Also, where specific terms could not be avoided (e.g. "I try to use cognates to help learn or remember words), examples and explanations were provided in sub-text beneath each statement (i.e. similar word translations between languages).

The demographic survey was adjusted slightly according to participant response regarding additional languages. It was found that providing a section to write one's native language(s) and another blank to write-in one's language(s) spoken at home was not sufficient for participants to express their language use backgrounds:

> *"… some people might speak both their native language and Swedish, or another language at home or elsewhere – and you want to know that, right?"* (P28)

And another participant suggested a demographic point that would provide better insight into perhaps exposure of learning styles and methods,

> *"The demographics should ask about method of Swedish study (courses, self-study, etc.)."* (P4)

These suggestions were incorporated into the SVLSS 1.1 by removing the section on 'language spoken at home' and replacing it with a field in which participants could list their 'additional languages', how long they have spoken/studied them, and their perceived level of proficiency. Also, a field that allowed participants to check off (or write-in) their primary learning methods used in Swedish L2 study was added to the SVLSS 1.1.

Participants were asked to provide any word learning strategies that they use, but were not reflected in the VLS list on the SVLSS 1.0. A participant noted the use of song and lyric in their studies,

> *"… listening to songs' lyrics (in Swedish), at first looking up words that I don't understand and then reminding myself what the words mean every time I hear the song. It works well if you like the song!"* (P19)

This learning paradigm was not reflected by any VLS in the initial list, so an item was added, *"When learning Swedish words, I connect tone or music to words to help me remember them."* Other statements were more contextual, detailed, or redundant variations of VLS that were already included in the SVLSS 1.0, for example;

> *"I study and interact with other people mostly in Swedish"* (P4) was already reflected by the VLS item, *"I use vocabulary words in casual speech to help me remember them better"*.
>
> *"Reading without a dictionary, learning the meaning of a word out of a context and recognize it again and again in the text until you remember it."* (P19) was already reflected by the VLS item, *"I try to guess word meaning, pronunciation, or spelling based on what I already know about the word or where I find it."*
>
> *"…I read a book and if a word turns up several times I look it up"* (P18) was already reflected by the VLS item, *"I look up Swedish words that I find in everyday life"* and, *"I try to read Swedish texts to find new vocabulary"*.
>
> *"… when I think an expression I see in a textbook is extremely useful, I write it down"* (P18) was already reflected in VLS item, *"I take note of common/important words I don't know so I can review them later."*

As such, participant contributions following in this vein did not influence any significant revisions to the VLS list.

Three sets of VLS items from the SVLSS 1.0 were combined in the SVLSS 1.1 item list. "*I repeatedly review words over time*" and *"I review notes that I take at later times"* were deemed redundant as 'notes' here, in a conceptual sense, largely refers to vocabulary learning information, i.e. words. They were combined into a new item, *"I review words or my own notes repeatedly over time"*. Two meta-strategic items were combined*; "I reflect on my personal learning style when studying Swedish vocabulary"* and, *"I reflect on my personal learning strengths and weaknesses concerning vocabulary learning."* Both statements are conceptually similar as learning styles can be influenced greatly by a learner's vocabulary learning strengths and weaknesses. They were combined into, *"I reflect on my personal learning style, strengths and/or weaknesses when studying Swedish vocabulary."* Finally, another set of meta-strategic VLS statements, "*I reflect on using vocabulary learning strategies*" and, "*I reflect on vocabulary learning in Swedish*" were deemed redundant and superfluous considering that although each statement is conceptually different (i.e. VLS use vs. overall vocabulary learning), overall vocabulary learning is likely to contain reflections on personal VLS use. These items were combined into, *"I reflect on vocabulary learning in Swedish in general."*

Revisions to the SVLSS 1.0 resulted in the SVLSS 1.1, a 74-item questionnaire. This version was piloted again ($N = 16$) and evaluated for readability, internal consistency of items included, and any missing VLS. Overall readability of the SVLSS improved significantly from 51.8 to 60.7, considered to reflect a reading difficulty of 'plain English' easily understood by age 13- to 15-year-old native English speakers.

Following the new round of piloting, the VLS list was revisited with regards to participant and colleague feedback on missing or redundant items.

One set of items from the SVLSS 1.1 was combined for the SVLSS 1.2. The statements, *"I watch Swedish TV or film to try and find Swedish vocabulary, in general"* and, *"I watch TV and film in Swedish with subtitles on to learn new Swedish words"*, though slightly different conceptually (i.e. watching media in general vs. watching media specifically with subtitles), could be combined in favor of deleting the more vague concept of the two (watching media in general). The new combined statement became, *"I watch TV or film (in Swedish or with Swedish subtitles) to try and find or practice vocabulary."*

Two VLS items were deleted from inclusion in the SVLSS 1.2 item list due to redundancy in relation to other VLS items in the list. The statement, "*I read whole sentences out loud to help me remember specific words in them*" was deleted as it was thought to reflect two VLS that were already included in the VLS list: "*I remember the sentence for words I found in those sentences*" covers the associative encoding of a word meaning and its sentence context and, "*I read words out loud [or quietly to myself] over and over*" reflects verbal repetition of words for retention. Another statement, "*I write down words while saying them out loud*" was deleted as it similarly reflected two VLS already included in the list: "*I try to remember words by the way they sound*" reflects the verbal component, and two VLS involving writing words down for retention (i.e. writing individual words, writing word lists) provide a more detailed opportunity for the learner to express their strategic learning approaches.

Three new VLS items were added to the SVLSS 1.2 list in response to student feedback wherein two or more participants suggested the addition of VLS that were not yet represented in the SVLSS. The item statement, *"I make use of pictures (in text) or gestures (in speech) to help me understand Swedish vocabulary that I find in that context"* was added to reflect the use of non-textual context clues for discovery of word meaning, which was not represented in the SVLSS. *"I remember words through common expressions or idioms that they are found in"* was added to reflect the use of collocational language as a means of associative encoding in order to retain word meaning. *"I listen to recordings of vocabulary words I want to remember over and over"* was added to reflect the use of audio equipment to train one's aural knowledge and retention of word form.

Some VLS statements were revised again with regards to clarity and word choice. Ten items were rewritten. Examples in the table below show the style of revision undertaken.

Table 12: *Statements Revised for Clarity and Word Choice.*

SVLSS 1.1 VLS Statements	SVLSS 1.2 VLS Statements
I practice vocabulary by describing the meaning of words in Swedish without mentioning the word itself.	I practice vocabulary by describing the meaning of words in Swedish without saying the word out loud.
I try to connect Swedish words directly to my native language translation of them in my mind.	I try to connect Swedish words to words I already know in my native language.
I motivate my Swedish vocabulary learning through internal motives.	My motivation for Swedish word learning comes from my natural interest in the language.

Revisions made to the SVLSS 1.1 after piloting resulted in a 74-item Likert-style questionnaire, the SVLSS 1.2.

3.5.2.3 SVLSS 1.2: Pilot Results and Revisions

The SVLSS 1.2 was used for a final pilot intended to collect data that would be used to measure readability, internal consistency, and the underlying construct validity for the instrument. Information from article II and article III is recounted and expanded upon here in describing the instrumentation process leading from the SVLSS 1.2 to the SVLSS 2.0.

The SVLSS 1.2 overall FRE measurement improved again from 60.7 (SVLSS 1.1) to 65 after further revision of VLS item statement text.

Exploratory factor analysis (EFA) was used to explore the underlying structure of the collected data for the SVLSS 1.2 (N = 182) as a means of guiding classification of VLS items included in the SVLSS. A Kaiser-Meyer-Olkin measure of sampling adequacy returned a result of 0.749, indicating that the sample size for this study holds 'middling' acceptability for factor analysis (Cerny & Kaiser 1977). The settings used for EFA and how they affect analysis are listed in section 3.4.2.3. A total of 22 factors were found with initial Eigenvalues greater than 1, accounting for 69.50% of the variance.

Table 13: *Initial Total Variance Explained for SVLSS 1.2.*

Factor:	Total	% of Variance	Cumulative %
1	12.655	17.102	17.102
2	4.804	6.492	23.593
3	3.381	4.57	28.163
4	2.596	3.508	31.671
5	2.576	3.481	35.152
6	2.462	3.327	38.479
7	1.984	2.681	41.16
8	1.883	2.545	43.705
9	1.816	2.454	46.16
10	1.669	2.255	48.415
11	1.568	2.119	50.534
12	1.518	2.051	52.586
13	1.483	2.004	54.59
14	1.447	1.956	56.545
15	1.411	1.906	58.452
16	1.298	1.754	60.205
17	1.27	1.716	61.922
18	1.233	1.666	63.588
19	1.188	1.605	65.193
20	1.118	1.511	66.704
21	1.069	1.444	68.148
22	1.004	1.356	69.504

Note: Factors 23-74, below Eigenvalue 1 suppressed.

Scree plotting (seen in article II) indicated testing for either a three- or six-factor level solution for extraction and analysis. Rotated component matrices were run to assess VLS item factor loading scores. At the six-factor level, common features between items with adequately high factor loading scores were observed more clearly than at the three-factor level, leading to acceptance of a six-factor extraction. Factor score values were cut off at the 0.3 level.

Table 14: *Factor loading scores for the six-factor solution.*

Factor	Rotated Factor Pattern					
	1	2	3	4	5	6
ITEM1		0.635				
ITEM2		0.622				
ITEM3		0.394	0.354			
ITEM4	0.318		0.406			
ITEM5		0.374	0.397			
ITEM6		0.479				
ITEM7	0.355			0.566		
ITEM8				0.563		
ITEM9				0.481		
ITEM10				0.389		
ITEM11				0.485		
ITEM12		0.491				
ITEM13		0.643				
ITEM14		0.503		0.382		
ITEM15		0.559			0.334	
ITEM16		0.533				
ITEM17			0.445			
ITEM18			0.336			
ITEM19						0.451
ITEM20						0.699
ITEM21		0.323				0.573
ITEM22						0.562
ITEM23						0.537
ITEM24				0.425		
ITEM25			0.589			
ITEM26						0.727
ITEM27			0.348			0.538
ITEM28				0.359		
ITEM29			0.514			
ITEM30			0.384		0.372	

ITEM31			0.45		
ITEM32		0.317	0.42		0.339
ITEM33			0.32	0.384	
ITEM34			0.493		
ITEM35			0.506		
ITEM36			0.526		
ITEM37			0.544		
ITEM38			0.673		
ITEM39	0.463				
ITEM40		0.301			
ITEM41					
ITEM42	0.451			0.47	
ITEM43	0.613			0.316	
ITEM44	0.514				
ITEM45	0.678				
ITEM46	0.597				
ITEM47	0.456				
ITEM48	0.579				
ITEM49	0.508		0.343		
ITEM50	0.502				
ITEM51	0.456				
ITEM52					0.49
ITEM53		0.342			
ITEM54				0.478	
ITEM55					0.37
ITEM56		0.49			
ITEM57	0.486				
ITEM58	0.574				
ITEM59	0.433	0.322			
ITEM60				0.32	
ITEM61	0.538				
ITEM62	0.429				
ITEM63	0.53				
ITEM64		0.358			0.433

ITEM65		0.495	0.381	
ITEM66			0.62	
ITEM67	0.302		0.502	
ITEM68		0.331	0.423	
ITEM69		0.425	0.509	
ITEM70			0.421	
ITEM71			0.57	
ITEM72			0.518	
ITEM73			0.362	0.531
ITEM74			0.463	

Note: Values based on varimax rotation

All items were grouped together according to the factor they scored highest on, though it should be noted that cross-loading indicating factor correlations was observed for most items. As such, items with cross-loading scores of equal or nearly equal value were sorted onto the factor group that best fit the VLS construct 'red-thread' characterized by other items in that group. Initial evaluation of item factor scoring offered six groups given themes according to common shared characteristics of items included in each group. They were interpreted as; Cognitive memorization strategies, Depth enhancing strategies (through Use), Depth enhancing strategies (from Sources), Context- and association-based strategies, Self-regulative and reflective strategies, and strategies that utilize lexical information.

Table 15: *Principal Component Factor Analysis Rotated Six-Factor Extraction.*

Factor # and Construct Title	Rotated Eigenvalue	% of Variance	# of Items Loaded
1 Cognitive memorization strategies	6.143	8.301%	17
2 Depth enhancing strategies (Use)	4.929	6.661%	12
3 Context- and association-based strategies	4.926	6.657%	14
4 Depth enhancing strategies (Sources)	4.297	5.806%	12
5 Self-regulation & reflection	4.257	5.752%	11
6 Lexical information strategies	3.923	5.301%	8

Factor one accounted for 8.3% of the variance with 17 items loading onto it. Many of the higher scoring items grouped on this factor reflected strategies that demonstrate the use of repetition to better retain already acquired or encountered word knowledge (ITEM 43, 44, 45, 46, 47, 50, 58) (i.e. VLS de-

scribed in section 2.2.3.1.1). Less obvious repetition-based VLS items may have been interpreted by participants as repetitive strategies, such as quizzing oneself [repeatedly] (ITEM 48), labeling items with L2 words [to view repeatedly] (ITEM 51), or organizing words into groups or lists [to review] (ITEM 61). Items also may have been interpreted through the statements' use of the word 'review', which potentially evokes repetition through study (ITEM 39, 43, 49, 58), and curiously does not appear in item statements that loaded onto the other factors. Other items that loaded onto this factor that do not fit the theme in a more obvious way reference reflection or regulation of one's vocabulary learning (ITEM 57, 58, 59, 62, 63). One item did not score over 0.3 (ITEM 41), indicating a very weak correlation, although the item cross-loaded similarly onto several other factors.

Factor two accounted for 6.66% of the variance and 12 items loaded onto it. The VLS that loaded onto factor two reflected strategies used for both finding new word information (i.e. VLS described in section 2.2.3.1.2) through attending to aural or visual target language input (ITEM 12, 13, 14, 15, 16), as well as the production of words to strengthen retention of vocabulary knowledge (ITEM 1, 2, 3, 6, 56) (i.e. VLS described in section 2.2.3.1.3). Strategies for finding and retaining new word knowledge are also seen in factor four, but lean more towards the use of context clues and previous knowledge for facilitation. The two lowest scoring items in this list did not seem to fit the theme in an obvious way. ITEM 53 deals with an intrinsic motivation for learning words, while ITEM 40 considers the use of colloquial language for word retention.

Fourteen items loaded onto factor three, which accounted for 6.66% of the variance. The characterizing feature for most strategies in this group was that they operated through associating word knowledge with some kind of other information (i.e. VLS described in section 2.2.3.1.1). This information involved time (ITEM 38), other words (ITEM 25, 29, 30), sound (ITEM 18, 36), imagery (ITEM 17, 25, 35), text (ITEM 4, 5, 32), location (ITEM 37), or a general sense of context (ITEM 31, 34). Although all items in this group could be fitted into the interpreted theme, some statements seemed to be pointing towards other strategy types, though may have been misinterpreted by participants. For example, ITEM 17 represents a strategy for finding new word knowledge, but may have been construed by participants as a strategy for associating picture/gesture information to known information for better retention.

Twelve items loaded onto factor four, which accounted for 5.80% of the variance. This item list seems to represent a kind of extension of the depth enhancing strategy types found in factor two, but with a focus on such strategies as those represented as 'linguistic cues', 'the immediate context', 'dictionary strategies', and 'note-taking strategies' as seen in Gu and Johnson's (1996) VLQ.

The lion's share of VLS that loaded onto factor four represented strategies performed to establish new vocabulary knowledge through the use of note-taking (ITEM 7, 42), look-up strategies (ITEM 8, 9, 10), using previous knowledge (ITEM 11, 24, 28, 33). Items that were not obviously connected to the central factor theme included reflecting on errors (ITEM 65), using extrinsic motivation (ITEM 54), and the use of technology to assist in learning (ITEM 60). It is possible that participants may have perceived error correction and use of technology as continued means of finding new word knowledge, which would place those strategies more meaningfully within the central theme of the item group. However, this remains conjecture as the wording of the VLS item statements may have been misleading or overly vague for the participant audience, resulting in misrepresentation.

Eleven items loaded onto factor five, which explained 5.75% of the variance. The majority feature that VLS in this item group possessed was the use of reflection on and regulation of their vocabulary learning experience (i.e. VLS described in section 2.2.3.1.4). These reflections were characterized by affective considerations and self-regulation (ITEM 55, 66, 72), considering the impacts of word learning (ITEM 67, 68, 71), considering personal learning style (ITEM 64), and considering the nature of the target language (ITEM 69, 70, 74). An item that did not obviously fit into the central item group theme was 'staring at words to help remember them visually' (ITEM 52), a statement that seems to reflect a more rehearsal-based approach to word learning. However, the extent to which this statement reflects an actual *strategy* is suspect due to its perceived lack of a clear goal besides retention of a word's orthographic form, which has been covered elsewhere more explicitly (ITEM 19, factor six).

The final item grouping, factor six, accounted for 5.30% of the variance with eight items loading onto it. The items in this group, while including VLS that represented association-making techniques (ITEM 23, 26, 27) as well as analytical techniques (ITEM 20, 21, 22, 73, 19), all shared the core characteristic of being concerned with the strategic use of lexical information to better understand and retain related vocabulary knowledge. The lexical information occurring in VLS items here include representations of the *form* (ITEM 22, 73, 19), *meaning* (ITEM 27) and *use* (ITEM 26, 20, 21, 23) dimensions of word knowledge.

For a more detailed discussion of the factor groupings with regards to the anchoring VLS theory motivating each classification, refer to article II. A Cronbach's alpha measurement was obtained for each factor group in order to evaluate the internal consistency of item lists. Alpha coefficients between 0.743 and 0.856 for all factor groupings suggest an adequate-to-good reliability of item stability per construct (Nunnally & Bernstine 1994).

Table 16: *Cronbach Alpha per Factor Group.*

	Construct	Cronbach Alpha	Total Items
1	Cognitive memorization strategies	0.856	17
2	Depth enhancing strategies (Use)	0.795	12
3	Context- and association-based strategies	0.832	14
4	Depth enhancing strategies (Sources)	0.743	12
5	Self-regulation & reflection	0.753	11
6	Lexical information strategies	0.812	8

These six constructs were adopted as a kind of VLS taxonomy to be used in structuring SVLSS revision with regards to item statement rewriting, retention, or deletion. The emergent categories were initially interpreted using Nation's (2013) VLS taxonomy (see section 2.2.3.2) as a kind of scaffold, guiding theoretical classification for an initial VLS taxonomy. Memorization strategies, lexical information strategies and context- and association-based strategies seemed best related to Nation's VLS classification of processes of establishing vocabulary knowledge, such as noticing and retrieval of knowledge. Depth increasing strategies (via sources) most closely relate to sourcing strategies, used for finding information about words. Depth increasing strategies (via use) relate to skill-in-use strategies used for enriching vocabulary knowledge. The self-regulatory and reflective strategies reflect Nation's planning strategies, which involves what word knowledge to focus on, and how to do so.

Table 17: *SVLSS Constructs in Relation to Nation's (2013) VLS Taxonomy.*

SVLSS 1.2		Nation (2013)
1	Memorization Strategies	PROCESSES
6	Lexical information strategies	
3	Context & Association Based strategies	
4	Depth Increasing Strategies (via Sources)	SOURCES
2	Depth Increasing Strategies (via Use)	SKILL IN USE
5	Self-regulation & reflection	PLANNING

Using Nation's taxonomy as a theoretical guide, the item lists loaded onto each of the six categories could then be evaluated for wording and appropriateness, guiding adjustments to the SVLSS item pool that would intend to increase item pool representativeness of the EFA-guided six-category VLS taxonomy.

3.5.2.4 Revising the SVLSS 1.2 into the SVLSS 2.0

Two methodological approaches to revising the SVLSS 1.2 were undertaken, resulting in the SVLSS 2.0 instrument. First, item lists were reconsidered with regards to EFA factor loading scores, then revised in order to express better clarity of the specific VLS-based activities each statement was intended to represent. Second, item lists were revised further according to a meta-analysis of other relevant VLS questionnaire taxonomy in order to best represent the underlying constructs of the chosen VLS taxonomy represented by the SVLSS.

3.5.2.4.1 EFA Factor Scores and Issues with Item-Construct Fit

It should be noted at the outset that although EFA has commonly been used to help facilitate questionnaire validation and design, it remains only an interpretive tool that does not offer a concrete formula for instrument refinement (Osborne 2014). That said, although the exploratory nature of EFA may result in misleading and non-generalizable conclusions (i.e. Petrić & Czárl 2003), it can also be used as a tool to help to point towards potential hazards that may exist for nascent instrument designs. EFA results were revisited in order to help guide attention towards potentially problematic items in the SVLSS. The purpose of this examination was to operationalize the deletion or revision of inappropriate items in the item pool by seeking out problematic patterns potentially revealed by EFA results.

Using data collected from SVLSS 1.2 distribution (article II), low and diffusely cross-loading scores for individual items were examined with regards to their fit within the chosen VLS construct mapped onto factor groupings. Score ratings (high, moderate, low) were applied to the rotated six-factor pattern matrix values in order to establish thresholds used to examine issues with cross-loaded items. These scores were essentially chosen in order to provide an initial level of organization to the item retention, revision and deletion process. These scores can be considered to be demarcation points for pointing analysis towards potential issues with individual or groups of items. The values chosen were based on a survey of factor scores appearing in analysis loosely coupled with usually accepted and rejected EFA scores (see section 3.4.2.3). A survey of all scores resulted in labels of 'low' if they were between 0.2-0.299, 'medium' between 0.3-0.399, and 'high' over 0.4. Scores below 0.2 were removed from the table below for visual clarity.

Three types of issues arose from factor loading scores; items that scored high on one factor but cross-loaded onto other factors with moderate or low scores, items that cross-loaded with similarly moderate scores, and items that cross-loaded with similarly low scores. The table below shows all items that reflected these issues. Items in bold will be discussed in detail.

Table 18: *Factor Scores with Multiple or Low Loadings.*

		1	2	3	4	5	6
Single-factor High-score (with med- and low-)	ITEM04	0.318**		0.406***			
	ITEM14		0.503***		0.382**	0.266*	
	ITEM15		0.559***			0.334**	
	ITEM21	0.227*	0.323**				0.573***
	ITEM27			0.348**			0.538***
	ITEM28			0.255*	0.359**		
	ITEM32		0.317**	0.42***		0.339**	0.289*
	ITEM43	0.613***			0.316**		
	ITEM49	0.508***		0.343**			
	ITEM59	**0.433*** **	**0.322****		**0.251***	**0.207***	
	ITEM60				0.32**		
	ITEM61	**0.538*** **		**0.3****			
	ITEM64	0.273*	0.358**		0.235*	0.433***	
	ITEM65		0.223*		0.495***	0.381**	
	ITEM67	0.302**				0.502***	
	ITEM68	0.245*			0.331**	0.423***	
	ITEM69				0.425***	0.509***	
	ITEM73					0.362**	0.531***
Multiple factor high/med (with low) score							
	ITEM03		**0.394****	**0.354****			
	ITEM05		**0.374****	**0.397****			
	ITEM10		0.218*	0.243	0.389**		
	ITEM18	0.201*		0.336**	0.296*		
	ITEM30			0.384**		0.372**	0.232*
	ITEM33			0.32**	0.384**		0.29*
	ITEM40		**0.301****	**0.242***	**0.238***		
	ITEM42	**0.451*** **			**0.47*** **		
Multiple factor (low only) score.							
	ITEM41	**0.269***			**0.248***		**0.227***

***	High
**	Medium
*	Low

Note: Scores > 0.2 filtered from table.

After a careful examining the above items presenting with cross-loading factor scores, three modalities of problems seemed to emerge.

First, several items that returned low or cross-loaded scores seemed to all share a feature that their representative VLS did not 'fit' into a single one of the six VLS constructs but could ostensibly represent aspects of several constructs. For example, ITEM41, *"I try to memorize words however I can"* reflects use of memorization strategy for word learning, but the vague wording of *'[…] however I can'* is worded in a way that is highly susceptible to a variety of interpretations by participants. Similarly, ITEM59, "*I plan to use my free time to casually practice Swedish vocabulary"* and ITEM42, *"I write down vocabulary notes"* are worded in ways that are far too open to interpretation to be reliable representations of specific VLS activities, and therefore may have contributed to more disparate factor grouping correlatives.

A second problematic modality was observed in overly contextually-niche VLS items that may have been too specific to load onto generalized factor groups, potentially essentially representing its own construct, which likely resulted instead in cross-loading onto several factors. For example, ITEM03, *"I practice vocabulary by describing the meaning of words in Swedish without saying them"*, ITEM04, *"I create new mnemonic phrases to help me remember Swedish words"*, and ITEM15, *"I watch TV or film [in Swedish or with Swedish subtitles] to try and find or practice Swedish words"* may not have been strategies that are readily comprehensible or may have been misinterpreted by participants due to non-exposure to such specific practices.

A third problematic modality observed that high-scoring items seemed to fit the VLS construct they loaded onto (ITEM05, ITEM10, ITEM14, ITEM32, ITEM40, ITEM61), but suffered from vague or imprecise wording (e.g. ITEM05, "*I make up my own sentences to help me remember specific words"*) or represented multiple or clustered iterations of VLS in a single statement (e.g. ITEM10, *"I ask others (teachers, friends, natives) about Swedish word knowledge"*). These and the above issues with the ambiguity, overly-contextual nature, or interpretability of item-statement wording may have contributed to items being interpreted and responded to by participants in unintended ways, resulting in a lowered reliability for items with regards to the VLS actions that they should be representing as related to the original design aims of the SVLSS. This lowered reliability perhaps contributed to the low scores and cross-loading issues found in the rotated component matrix. The above issues with the items listed were pointed out through the guidance of EFA results and were used to examine, address and revise the SVLSS 1.2 item list.

Revisions were made with regards to the language clarity, readability and VLS representation of item statements. Four modalities of item wording issues were addressed: items with unclear use of language, item statements not clearly

representing the VLS behavior intending to be represented, items with language that may be inaccessible for L2 readers of English, and items that require clarification of the strategic nature of the behavior stated. The table below provides an example of each type of complication with a corresponding item statement and the revised statement.

Table 19: *Item Complications: Clarity and Readability.*

Item	Original Text	Complication	Revised Text
LANGUAGE CLARITY			
25	I try to use key-words (words used **to help us recall** other words) to help learn or remember words.	Overly academic language.	I use key-words (connecting a word to another word to help remember it).
CLARIFY STRATEGY			
51	I label items (i.e. in my home, workplace) in order to **review them often over time.**	Confounding memorization modality.	I label items (furniture, utensils, etc.) to help me remember the Swedish words for them.
ACCESSIBILITY			
50	... use **flashcards/index cards (or similar study tools)** to help me review words.	Define terms.	I write words on one side of a card, and the meaning on the other side to help me review words.
MAKE STRATEGIC			
19	... try to remember how to spell words.	Requires strategic action, otherwise learning style.	I try to learn spelling of words **letter by letter.**

43 item statements were adjusted in total to address the above concerns with the wording of text. Most changes to item statements that were revised for language clarity (ITEM 45, 44, 49, 12, 38, 37, 36, 29, 35, 34, 31, 4, 5, 24, 10, 33, 21) were minor adjustments intended to direct participants more towards the particular VLS in question. For example, ITEM29, *"I try to connect other related Swedish (or native language) words to the word being learned"* became, *"I connect other related Swedish words to the one I am learning"*. 'Trying' is inherent in all VLS use, but weakens the statement (i.e. trying does not necessarily reflect doing), and connecting TL words to L1/Additional language translations is a somewhat natural function of language learning that does not need to be included in the item statement, risking further confusion of the VLS being represented.

Other adjustments to statements were performed to clarify the VLS concept represented by the item (ITEM 43, 46, 48, 39, 47, 51, 1, 2, 15, 16, 6, 17, 32, 11, 9, 55, 26, 22). These revisions considered the core strategic element of the intended VLS, then revised the text to best represent that element. For example, ITEM32, *"I remember the sentence context for words I found in those sentences"* became, *"I connect words to the sentence, phrase or story I find them in"*. As the strategy in question sought to determine if participants encode word information using associated textual context, the overly vague wording was replaced with a concrete statement exemplifying the core VLS.

Item statements revised for participant readability (ITEM 50, 25, 7, 8, 28, 27) generally were overly verbose, or used inappropriately academic terminology for participants. For example, ITEM27, *"I try to put Swedish words into groups that have similar meaning or themes to help me remember them"* became, *"I group words into categories (e.g. animals, utensils)."* Providing a simple example better explains the core VLS concept of the item than using a moderately complex text explanation.

There were a significant number of statements that were problematic with regards to whether they were actually *strategic* in nature, or if they represented another aspect of the word learning experience. Many of these items were ultimately deleted after an inspection of their underlying constructs (see next section), though two items were revised and retained for use in the SVLSS 2.0 (ITEM 19 and ITEM 20). For example, the wording of ITEM19, *"I try to remember how to spell words"* problematically reflects a broad statement referring to what is commonly performed as a fairly automatic cognitive act (spelling), but does not necessarily indicate an explicit, goal-oriented strategy related to actively *learning* vocabulary. This item was revised as, *"I try to learn words spelling letter by letter"* in order to reflect a more strategic 'plan-of-action' for retaining vocabulary knowledge.

3.5.2.4.2 Situating the SVLSS within VLS Taxonomy

The six-category VLS taxonomy of the SVLSS 1.2 was compared to other relevant VLS taxonomy used to structure and classify VLS lists. This comparison allowed for a closer inspection of the emergent six-category taxonomy with regards to the VLS classification coverage of the SVLSS, and to help guide the item lists towards improved representation of the six-category VLS taxonomy. The VLS taxonomy consulted were extracted from Stoffer's (1995) VOLSI instrument, Gu & Johnson's (1996) VLQ instrument, Schmitt's (1997) VLS use questionnaire, and Nation's (2013) VLS taxonomy. This analysis and revision process occurred alongside the analysis and revision process resulting from EFA findings, presented in the section above. See section 2.2.3.2 for a breakdown of the instruments used by these studies, and

article III for details regarding the comparative analysis of the SVLSS and other VLS taxonomy.

Four major complications for the SVLSS 1.2 item list arose from a comparative analysis of other VLS taxonomy that highlighted item issues stemming from underlying conceptual issues with VLS items. The complications were identified as: (i) items that did not actually represent strategic behavior but rather self-regulative reflection *or* (ii) learning style, (iii) items that were overly vague and non-representative of any clear VLS construct(s), and (iv) items that were representative of other specific VLS items already included in the item list. The table below presents examples for each complication including the corresponding item statements.

Table 20: *Item Complications: Non-strategic, Vague, Redundant.*

Item#	Text	Complication	Construct
NOT STRATEGIC - BELIEF			
53	My motivation for Swedish word learning comes from my natural interest in the language.	Motivational belief. Non-strategic.	2
68	I reflect on the importance of learning Swedish vocabulary in terms of my overall language learning.	Reflective practice. Non-strategic.	5
NOT STRATEGIC – L. STYLE			
60	I use technology as a means of learning.	Modality of study. Non-strategic in itself.	4
OVERLY VAGUE			
41	I memorize words however I can.	Does not represent any specific VLS.	1
REDUNDANT			
58	I plan to review [specific amounts of] vocabulary over specific time periods.	Reflects same core VLS as #43.	1
43	I will review words or my own notes repeatedly over time.		1

The above complications led to the deletion of 28 items from the SVLSS instrument. Nearly the entire category of 'self-regulation and reflection strategies' was deleted as, after considerations of what strategic behavior is, these items did not, in fact, reflect planned, conscious, goal-oriented strategies. Rather, they represented reflective practices related to vocabulary learning which are im-

portant for self-regulation of learning, but non-strategic as presented. Deleted items were classified as reflecting preferred learning styles and self-regulative but not strategic behavior (ITEM 60, 63, 64, 65, 66, 67, 68, 69, 71, 72), items reflecting learning beliefs and motivations (ITEM 53, 54, 56, 74), and items that were too vague to reflect any concrete VLS concept (ITEM 3, 13, 14, 18, 41, 52, 57, 62, 70, 73). Items reflecting already included VLS concepts (ITEM 40, 42, 58, 61) were also removed.

SVLSS 1.2	Items	Influences	SVLSS 2.0	Items
Memorization Strategies	15	→ EFA Results (All Categories) VLQ, Nation: Rehearsal & Encoding Distinction →	Strategies for Improving Word Knowledge (Rehearsal)	9
(Lexical information strategies)	8	→ VLQ, Nation: Rehearsal & Encoding Distinction VLQ: 3 items Schmitt: 3 items VOLSI: 1 item →	Strategies for Improving Word Knowledge (Encoding)	24
(Context & Association Based strategies)	14			
Depth Increasing Strategies (via Use)	12	→ Nation: Generating/Skill in use VOLSI: 2 items →	Productive Activation Strategies	8
Depth Increasing Strategies (via Sources)	12	→ Schmitt: Establishing new word knowledge distinction Schmitt: 1 item VLQ: 3 items VOLSI: 2 items →	Strategies for Establishing New Word Knowledge (Sources)	13
		→ VLQ: 4 items →	Strategies for Establishing New Word Knowledge (Contexts)	7
Self-regulation & reflection	11	→ Beliefs, learning styles deleted VOLSI: 4 items VLQ: 2 items →	Strategic Self-Regulation	8
TOTAL	72		TOTAL	69

FIGURE 7: *SVLSS 1.0 to 2.0 Taxonomy Comparison.*

In line with the deletion of problematic items, the comparative review of VLS taxonomy also offered some solutions with regards to improving the VLS taxonomy represented by the SVLSS instrument. In short, the SVLSS 1.2 six-category taxonomy did not seem to provide adequate representation of key underlying concepts for representing the range of VLS that were retained in the item list after revision. Furthermore, the VLS items representing the six-category model of the SVLSS 1.2, when held up against other VLS lists (VLQ, VOLSI, Schmitt's questionnaire), seemed to have some glaring gaps with regards to strategy coverage for each construct (see article III and section 4.3). This taxonomical comparison resulted in a new four-construct model for the SVLSS 2.0. The new taxonomy uses Nation's (2013) VLS taxonomy as a

scaffold, and the other VLS lists as guides to 'fill in the gaps'. 25 new items were written for the SVLSS 2.0 that were borrowed (and adapted for use) from taxonomically related VLS categories appearing in the other VLS lists. The SVLSS 2.0 resulted in a 69-item Likert-style VLS list that can be viewed in appendix section 9.8. For a detailed account of the VLS list comparison and the taxonomical choices made in establishing the SVLSS 2.0 four-construct model, refer to article III.

The four-construct model (with two VLS categories possessing sub-categories) for the SVLSS 2.0 replaced the six-construct model connected to the SVLSS 1.2. The first category is 'strategies for improving word knowledge' (section 2.2.3.1.1), or VLS used to better retain known word knowledge to improve future recall. This category was divided into 'rehearsal' strategies (characterized by the use of repetition) and 'encoding' strategies (characterized as using associative links) strategies. The SVLSS 1.2 categories of 'memorization strategies', 'lexical information strategies', and 'context- and association-based strategies' were assimilated into this category. Six new items were added to the encoding sub-category; three adapted from the VLQ (physically acting out words, breaking down words into prefix/stem/suffix, remembering together words that sound similar), three from Schmitt's questionnaire (use of memory techniques, study words with pictures that represent their meanings, paraphrasing words' meanings to see if I know it), and one from the VOLSI (making up rhymes to help remember words).

The 'productive activation' category (section 2.2.3.1.3) better described strategies that use word knowledge productively in order to enhance skill with that word (and provide opportunities for further rehearsal/encoding) than the difficult-to-define 'depth increasing strategies via use' category from the SVLSS 1.2. Three new items were added to this category; two from the VOLSI (composing creative work using words I know to practice them, practicing new words by having conversations with native speakers) and one suggested by several participants (using online platforms to practice word knowledge).

Following the distinction made by previous taxonomy's between 'word discovery' strategies and 'word knowledge consolidation' strategies (Schmitt 1997), 'strategies for establishing new word knowledge' (section 2.2.3.1.2) acted as an extension and development of the 'depth increasing strategies via sources' category from the SVLSS 1.2. Two sub-categories divide this category into strategies that use material or factual sources for establishing new word knowledge, and strategies that use experiential or contextual sources to establish new word knowledge. New items were added to both sub-categories. Six items were added to the material and factual source strategies; three from the VLQ (making notes when finding useful expressions, writing down TL and L1 equivalents of words looked up, making note of new word meaning if word

seems common), two from the VOLSI (listening to radio programs to find words, listening carefully to native speakers to learn word pronunciation) and one from Schmitt's questionnaire (keeping a vocabulary notebook of words trying to learn). Four items were added to the experiential or contextual strategies, all from the VLQ (checking guessed meaning of words against context to see if it fits, analyzing word structure to guess word meaning, looking for other words in a passage to support a guess about a word meaning, looking for definitions or paraphrases in a passage to support a guess about a word meaning).

The final category, 'strategic self-regulation' reflects meta-strategies that help to regulate the use of other VLS with regards to learners' feelings, planning of learning, motivations (section 2.2.3.1.4). It replaced the deleted SVLSS 1.2 category 'self-regulation and reflection'. Six new items were added to this category; four from the VOLSI (trying to relax when I feel afraid using new words, encouraging myself to use new words even when afraid, awareness of errors using new words, learn easy words first), and two from the VLQ (looking for words in media that interests me, choosing which words are most important for me to learn before starting).

Using data collected in the study presented in report I, a test of Cronbach's alpha was performed to test for internal reliability of the newly structured VLS constructs for the SVLSS 2.0. Most categories returned alpha coefficients between 0.6 and 0.85 indicating fair to good levels of internal reliability for SVLSS item lists. Low scoring for self-regulation strategies (0.553) may be due to the multiple application of meta-strategies to a variety of VLS uses. The other five VLS categories (strategies for improving knowledge and strategies for establishing new knowledge were further divided by their sub-categories) represent strategies that are operated as goal-oriented tools for completing specific learning tasks, whereas meta-strategies are used to plan and regulate learners' strategy use and learning experience. Meta-strategies are consequently somewhat more open to interpretation (style of use, conceptualization) by participants, perhaps prompting a low internal consistency measure for item-construct representation. This may indicate that strategies that are heavily adapted by and adjusted to person-, situation-, and task-based contexts are more difficult to represent accurately by questionnaire items in context-less strategic behavior statements. The nature of VLS as necessarily context-embedded activities is discussed in further detail in sections 5.2, 6.3 and 6.4.

Table 21: *Cronbach's Alpha Scores for each VLS Category.*

VLS Category	Score	Items
1 Rehearsal (Improving Knowledge)	0.635	9
2 Encoding (Improving Knowledge)	0.824	24
3 Activation	0.638	8
4 Using Sources (Establishing New Knowledge)	0.792	13
5 Using Context (Establishing New Knowledge)	0.832	7
6 Self-Regulation	0.553	8
(1 & 2 - Combined Improving Knowledge)	0.834	33
(4 & 5 - Combined Establishing New Knowledge)	0.852	20

Preliminary efforts to investigate the validity of the SVLSS 2.0 were facilitated through the use of confirmatory factor analysis (CFA). The use of CFA instead of EFA was motivated through the acceptance of pre-determined organization for chosen and presented items on the questionnaire. In this sense, the theoretical constructs underlying the questionnaire are 'known', and the analysis of possible factor solutions presumes the total number of factors before extraction. However, using varimax rotation, replacing missing values with the mean, convergence failed, indicating that either the number of survey items may be too high for an appropriate CFA calculation, or that the number of respondents was perhaps too low. The initial CFA output provided a 20-factor solution, accounting for 61.916% of the variance. This number of factors, however, did not appropriately reflect the intended four-category VLS taxonomy used to organize the SVLSS 2.0. The Scree plot arm bend, generated by the analysis, was consulted, and following the confirmatory intent of the CFA, a four-factor solution was arrived at.

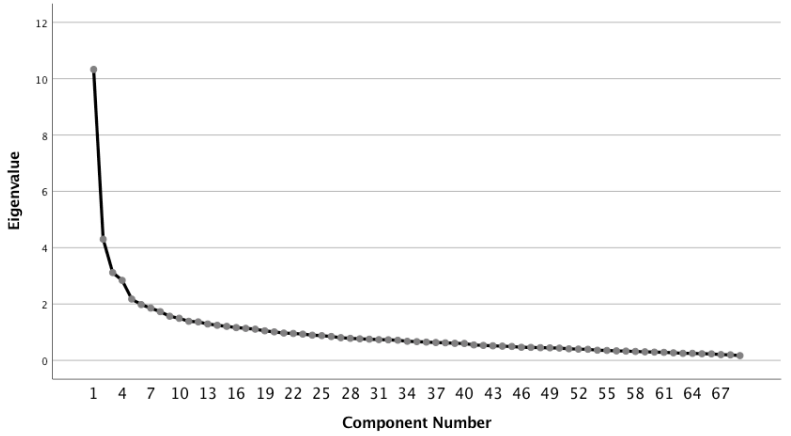

Figure 8: *Scree Plot.*

Unfortunately, a cumulative 29.15% of the variance was explained through the four-factor solution, indicating a weak factor structure. The four-factor solution was subject to CFA using principal components analysis, and used varimax rotation that did converge in 11 iterations.

Table 22: *Variance Explained by Four-Factor Solution.*

Extraction Sums of Squared Loadings			**Rotation Sums of Squared Loadings**		
Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
9.998	14.49	14.49	5.42	7.855	7.855
4.246	6.153	20.643	5.32	7.714	15.569
3.078	4.46	25.104	4.98	7.213	22.782
2.792	4.046	29.15	4.39	6.368	29.15

Four groupings of SVLSS items were aggregated according to loading scores resulting from the rotated component matrix (these have been marked in the table below). Grouping was based on each item's highest loading score per component (see table 23 below, highest scores in bold). The scores generated by this instance of CFA were considerably low, again indicating what might be interpreted as a weak factor structure for the SVLSS 2.0, or a lack of data strength with which to return an appropriate evaluation. It should be noted as well that many of the factor scores cross-loaded onto two or more factors with scores above the cut-off of 0.2. The four-factor solution showed some clustering tendencies leaning towards some of the pre-determined VLS taxonomy-based constructs, but did not cleanly indicate divergence of SVLSS VLS item representation for the taxonomy.

As such, CFA did not in this instance help to confirm or validate the underlying constructs intended for representation by the SVLSS, but also cannot act to rule out that they may exist anyway. Implications for these findings are discussed in report I, and in sections 4.5, 4.6.1, and 5.2.

The SVLSS 2.0 was used to collect data on reported VLS use of adult, beginner Swedish L2 learners in Sweden and report on their VLS use patterns as related to identifying demographic factors provided by participants. The results from a first round of distribution and data collection using the SVLSS 2.0 can be seen in report I and in section 4.5.

Table 23: *SVLSS 2.0 Rotated Factor Scores.*

Item	Component			
	1	2	3	4
ImpKnowRehearse1		0.223		**0.454**
ImpKnowRehearse2				**0.532**
ImpKnowRehearse3				**0.567**
ImpKnowRehearse4				0.464
ImpKnowRehearse5				**0.234**
ImpKnowRehearse6	0.288			**0.356**
ImpKnowRehearse7		0.205		**0.288**
ImpKnowRehearse8		**0.358**		
ImpKnowRehearse9		**0.349**		
ImpKnowEncode10	0.28	**0.453**		
ImpKnowEncode11	0.249	**0.391**		
ImpKnowEncode12	0.29	**0.539**		
ImpKnowEncode13		**0.518**		
ImpKnowEncode14	**0.448**	0.372		
ImpKnowEncode15		**0.506**		0.207
ImpKnowEncode16	**0.383**	0.32		
ImpKnowEncode17		**0.507**		
ImpKnowEncode18		**0.465**		
ImpKnowEncode19	**0.518**			
ImpKnowEncode20	**0.448**			
ImpKnowEncode21	0.212	**0.371**		
ImpKnowEncode22		0.236	**0.337**	
ImpKnowEncode23		**0.345**		0.218
ImpKnowEncode24		**0.279**		
ImpKnowEncode25		**0.267**		
ImpKnowEncode26		**0.499**		
ImpKnowEncode27		**0.434**	0.232	
ImpKnowEncode28		**0.514**		
ImpKnowEncode29		**0.489**		
ImpKnowEncode30		**0.416**	0.228	
ImpKnowEncode31		**0.543**		
ImpKnowEncode32	**0.476**			
ImpKnowEncode33		**0.345**		0.301
Activate34			**0.453**	0.416

Activate35			**0.503**	
Activate36		0.26	**0.475**	
Activate37			**0.242**	
Activate38	0.207	**0.458**	0.292	
Activate39			**0.61**	
Activate40			**0.296**	
Activate41	0.248		**0.343**	
IncKnowSource42			**0.703**	
IncKnowSource43			**0.692**	
IncKnowSource44	0.231		0.217	**0.431**
IncKnowSource45	**0.471**	0.235		0.258
IncKnowSource46	0.314		**0.36**	0.255
IncKnowSource47	0.226	0.336	**0.374**	
IncKnowSource48		0.232		**0.469**
IncKnowSource49	0.34	0.2		**0.538**
IncKnowSource50				**0.568**
IncKnowSource51	0.338			**0.65**
IncKnowSource52				**0.665**
IncKnowSource53			**0.525**	
IncKnowSource54	0.351		**0.604**	
IncKnowContext55	**0.658**		0.251	
IncKnowContext56	**0.622**			
IncKnowContext57	**0.663**			
IncKnowContext58	**0.626**			
IncKnowContext59	**0.347**		**0.347**	
IncKnowContext60	**0.582**		0.233	
IncKnowContext61	**0.532**	0.201	0.212	
SelfReg62	-0.22	0.247	0.311	**0.369**
SelfReg63	**0.401**		0.317	0.286
SelfReg64			**0.244**	
SelfReg65			**0.356**	
SelfReg66	0.203		**0.316**	
SelfReg67		**0.259**		
SelfReg68		0.244	**0.498**	
SelfReg69		0.238		**0.272**

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

Rotation converged in 6 iterations.

4. Summary of Findings

The purpose of this section is two-fold. First, brief overviews of the studies performed in this research project are presented including the motivating rationale behind each study, their research questions, approaches taken to perform the study, the participants involved, and the findings and implications of each study. Second, this section is used to provide further detail in studies that were not able to be reported in their related articles due to focus requirements or word limit restrictions imposed by the publication bodies overseeing revision of the articles. Additional details are related to collected data sets, results and implications. The concluding section of this chapter will synthesize and summarize findings across all studies. Additional methodological details for each study can be found in several parts of the methodology chapter.

4.1 Article I and SVLSS 1.0 Piloting

The research performed to constitute article I was undertaken with the purpose of collecting qualitative data on how adult, beginner Swedish L2 learners approach strategic vocabulary learning. The data was collected through the use of semi-structured interviews (section 3.3.1) concerning learners' use of VLS for Swedish language learning, related to a variety of contexts and methods. An embedded vocabulary learning task (section 3.3.2) accompanied the interview intending to elicit further reported and observed VLS use from learners. The collection of qualitative VLS use data was then transcribed and analyzed using a bottom-up content analysis method (section 3.4.1.1) intended to catalogue and itemize the discrete strategies elicited by participants. These strategies were

used to populate a new VLS questionnaire intended to collect data from the same target demographic that was involved in providing the data used to create the instrument. This questionnaire (the SVLSS 1.0) then underwent piloting with regards to readability, item fit, and internal consistency measures.

The participants involved in the interview and vocabulary learning task events were newly starting adult learners of Swedish language at a Swedish university. Participants all identified as beginner learners and reported having only limited amounts of time studying Swedish language explicitly, though they also noted a relatively wide range of time that they had been exposed to the Swedish language. They expressed a range of multilingualism, and a variety of native languages (one learner reported bilingualism) – establishing the participant sample as experienced in language use and learning.

Table 24: *Interviews with Learning Task Demographic Information.*

N = 13							
Education		**Swedish Proficiency**		**Multilingualism**		**Native Languages**	
High school	0	None	0	Monolingual	2	Catalan	1
Associate Degree	0	A1-A2	13	1 additional language	3	Croatian	1
Bachelor Degree	8	B1-B2	0	2 additional languages	5	Dutch	1
Master's Degree	3	C1-C2	0	3+ additional languages	3	English	5
Doctoral Degree	1					German	1
						Greek	2
						Icelandic	1
Average Age		**Average time spent studying Swedish**		**Average time spent living in Swedish language environment**		Russian	1
24.7 yr. *SD* = 5.95		3.6 mo. *SD* = 1.56		17.3 mo. *SD* = 24.17		Spanish	1

Transcription data analyzed using content-analysis revealed a total of 914 instances coded as 'strategic behavior for learning vocabulary'. All strategies were tagged as 'elicited' or 'observed' according to transcription data and interviewer notes (see section 3.5.1). These strategies were also tagged as 'meta-strategies', or strategies that were based in planning learning and regulating emotions, motivations or the learning experience, or as active strategies, or strategies that

were explicitly intended for improving or establishing better word retention or recall (see sections 3.4.1.1 and 6.2 for more on these tags).

Examination of the 914 coded instances of strategic behavior resulted in 155 *different* strategic approaches to Swedish L2 vocabulary learning after the initial round of coding. These strategies were pared down considerably through axial coding. The second round of coding involved double-checking the data with regards to whether or not the coded strategies were actually strategic or not. This round discovered that some items reflected a generalized 'learning style' (e.g. I like when the teacher tells me what to learn'), rather than a specific strategic approach to vocabulary learning. Such items were deleted in order to maintain a list of VLS that best resembled the 'strategic behavior' parameter set for content analysis (see section 2.2.2 and 3.4.1.1). This round cut the total strategy count to 135. Two more rounds of axial coding first broke strategies that included compound approaches into singular VLS, significantly paring down the VLS list. This round also sought out strategies that were only mentioned once throughout all interview events and either deleted them due to low representation in collected sample data, or found other strategic approaches that essentially represented the same strategy and combined them. This process brought the strategy list to 75. The final round of coding combined strategies that were categorically similar but complementary, bringing the final strategy list to 73 discrete VLS, 51 'active' and 22 'meta' strategies (more on this analysis method in section 3.4.1.1). More 'active' strategies were coded than 'meta' strategies overall, as well as for every participant.

Overall, participants ranged between 37 to 100 instances of strategic behavior, averaging 70 instances (SD = 17.63) each. Elicited and observed strategies were nearly equally distributed across all participants. Elicited strategies accounted for about 45% (SD = 6.17) of all strategic behavior recorded and observed strategies for about 55% (SD = 12.05), indicating a good balance between strategies discussed by participants and strategies actually performed by participants during interview events. The table below shows the raw final numbers of instances of strategic behavior elicited and observed from each participant, as well as the numbers of strategies that were tagged as 'active' or 'meta'.

Table 25: *Strategic Behavior Instances per Participant.*

Participant	Active		Meta		Total Instances
P1	42	88%	6	13%	48
P2	40	74%	14	26%	54
P3	48	67%	24	33%	72
P4	31	84%	6	16%	37
P5	46	73%	17	27%	63
P6	75	75%	25	25%	100
P8	50	81%	12	19%	62
P10	62	76%	20	24%	82
P11	57	75%	19	25%	76
P12	70	76%	22	24%	92
P13	58	75%	19	25%	77
P14	63	76%	20	24%	83
P15	47	69%	21	31%	68
Average	53	76%	17	24%	70
Totals	689	75%	225	25%	914

The raw 914 instances of strategic behavior were adjusted after coding to reveal the final list of what was considered 73 conceptually different VLS. Strategic behavior instances that were repeatedly observed and elicited from the same participant were counted only as 'one strategy' reported by a participant. The table below expresses the total amount of *different* strategies reported by participants during interviews and vocabulary learning tasks. Overall, participants still elicited between 28 to 62 different strategies in their interviews and learning tasks, averaging 41 strategies per data collection session (SD = 9.13).

The results of the content analysis VLS listing are somewhat limited due to the fact that efforts were not made to *classify* the different VLS into a new or pre-existing strategy taxonomy. This analytical extension was not undertaken due to the original intention of this study, which was to use the resultant VLS list to populate a questionnaire instrument that would then be piloted and subsequently evaluated with regards to its underlying construct system, thus informing the classifications of VLS included in it. As such, the above study was performed as an initial step in the instrumentation process, not as a stand-alone, descriptive investigation of a learner sample. However, some implications can be extracted concerning interview and vocabulary learning task data with regards to their reported strategy use.

Table 26: *Strategic Behavior Instances per Participant after Adjustment.*

Participant	Active		Meta		Total Strategies
P1	30	88%	4	12%	34
P2	24	73%	9	27%	33
P3	26	67%	13	33%	39
P4	23	82%	5	18%	28
P5	24	73%	9	27%	33
P6	37	79%	10	21%	47
P8	25	76%	8	24%	33
P10	33	72%	13	28%	46
P11	35	78%	45	22%	45
P12	32	68%	15	32%	47
P13	29	66%	15	34%	44
P14	43	69%	19	31%	62
P15	21	58%	15	42%	36
Average	29.4	73%	14	33%	41
Totals	382	72%	145	28%	527

The participant sample reported on the use of and actually used a wide range of VLS during the interviews and learning tasks. The least amount of strategies reported in any data collection session was 28 – still a formidable amount of strategies to employ during specifically vocabulary learning. The participant sample were experienced language users, which may have resulted in them having been already exposed to a wide variety of VLS that they both know and employ in their learning, resulting in the high numbers of strategies. The much higher number of 'active' strategies over 'meta' strategies is likely a result of the elicitation methods used in this study, as well as the nature of meta-strategic learning. Participants were trained to recognize the differences between 'active' and 'meta' strategies, and to report their experiences with both. However, if participants are not actively reflective of their own strategic approaches to regulating their own learning, they may very well not be aware of their existence. Furthermore, the vocabulary learning task was a short-term, low-risk learning experience that learners were probably unlikely to employ self-regulative techniques on, rather utilizing whatever their preferred methods might be to learn a word list in the short term. This may have resulted in the absence of meta-strategic behavior being elicited in the think-aloud context. Also, meta-strategies must be elicited (they are often covert mental actions) to be recorded in data collection contexts. In the end, about half of the strategic behavior in-

stances recorded were judged as elicited – restricting the possibility also that a strategic behavior could be coded as meta-strategic, as compared to active strategies which could be recorded either through observed or elicited means.

The instrumentation methods adopted by this study represent the first steps in creating a VLS questionnaire using a bottom-up approach not structured using a pre-determined taxonomy (e.g. Stoffer 1995), as opposed to creating a questionnaire that is designed using a pre-determined construct structure (e.g. Gu & Johnson 1996). This approach was chosen as a means of developing an instrument that is *first* constructed using data from the target audience and context, then tempered according to emergent structural interpretations of collected data, and finally revised according to theoretical anchoring from other extant VLS taxonomy. In this way, rather than context-specific factors influencing instrumentation in post hoc fashions (e.g. adding items on to a list as an afterthought), the context itself is consulted first to establish instrument design, then is grounded with the addition of taxonomical and theoretical scaffolding. These processes are performed in the piloting of the SVLSS (see below), in collection of data using SVLSS 1.2 (section 4.2), and collection of data using SVLSS 2.0 (section 4.5).

Following the interview and learning task data coding and analysis, the SVLSS 1.0 was established and piloted, followed by revision of the SVLSS 1.1, and another round of piloting and revision, resulting in the SVLSS 1.2 (for instrumentation details see section 3.5.2.2). These pilot sessions were performed in order to assess and improve instrument readability, fit for VLS items, and to control for item redundancy and consistency. The piloting approach taken was to distribute the SVLSS 1.0 and 1.1 to participant samples that both filled in the questionnaire and provided feedback on readability and item lists through informal one-on-one interviews, and open-ended text responses that appeared at the end of the questionnaire.

The participant group (N = 28) for the 73-item SVLSS 1.0 pilot was quite diverse. This diversity was intended as it was thought that a wider range of learner backgrounds and experiences would be able to comment critically on the instrument with regards to potentially unseen issues. The greatest diversities were seen in how long learners had spent learning Swedish (M = 21.96 months, SD = 21.47), how long they had been exposed to a Swedish language environment (M = 25.18 months, SD = 18.84), proficiency levels (None to C1-C2), multilingualism (Monolingual to 3+ additional languages spoken), and range of native languages (14 native languages reported across demographic). This group helped to identify issues with item statement wording, overall questionnaire organization, accessibility and readability. Aside from response scale data to items included on the SVLSS, evaluation of the instrument was facilitated through informal interviews with participants, notes written

on the questionnaires by participants, and through responses to a final open-ended question on the SVLSS 1.0 pilot asked participants if the questionnaire was missing any VLS that they performed regularly for Swedish vocabulary learning. Revisions were made to the demographic survey at the start of the questionnaire and word choices regarding overly-academic language, and one item was added to the item list suggested by a participant. Detailed findings and subsequent revisions made according to participant feedback from the SVLSS 1.0 pilot can be seen detailed in section 3.5.2.1.

The participant sample (N = 16) involved in the piloting of the 74-item SVLSS 1.1 was also quite diverse, however, data from high proficiency learners (C1+) was removed from analysis in order to explore feedback from the intended demographic of adult, *beginner*, Swedish L2 learners. Again, diversity was found in average time spent studying Swedish (M = 17.3 months, SD = 14.65) and average time spent living in a Swedish language environment (M = 16.3 months, SD = 1.47), even though participants only reported Swedish proficiency at the pre-A1 to B1 level. Participants reported a range of degrees of languages known (monolingual to 3+ additional languages spoken), and seven native languages were spoken across the group. These learners averaged an age of 28 (SD = 6.4), but all were studying at the university level.

Again, revisions to the SVLSS 1.1 were facilitated according to interviews, notes, and write-in responses provided by participants. One set of items from the SVLSS item list was combined due to conceptual sameness, two items were deleted due to redundancy, and three new items were added in connection to participant suggestion. Ten other items were revised again with regards to clarity and word choice. Further detail regarding findings from the SVLSS 1.1 pilot the and subsequent revisions performed that resulted in the SVLSS 1.2 can be viewed in section 3.5.2.1. The SVLSS 1.2 was used to perform a final round of piloting for the SVLSS instrument, which is reported on in article II (see section below).

4.2 Article II

The second study of this project (article II) was performed in order to complete the initial rounds of piloting for the SVLSS instrument. The VLS item list that populated the SVLSS 1.2 was, prior to this study, not arranged by any kind of VLS taxonomy or classification system. The intention behind this stage of instrumentation was to distribute the SVLSS 1.2 to adult, beginner Swedish L2 learners studying Swedish at the university level to collect data on their VLS use that would be analyzed in order to evaluate the underlying constructs of

the SVLSS as well as assess internal consistency, and then make changes to the SVLSS 1.2 with regards to theoretical constructs chosen and their representative item lists. The primary methods of analysis were exploratory factor analysis, measures of Cronbach's alpha coefficient of internal consistency, and various measures of readability for item statements displayed in the instrument (each method described in section 3.4.2).

The participant sample involved in the piloting of the SVLSS 1.2 was relatively diverse in terms of demographic information reported. All participants were over the age of 18, and reported being either enrolled in university, or having achieved degrees from bachelor's to doctoral. Time spent studying Swedish and time spent living in a Swedish language environment was somewhat diverse, though the majority of participants had only spent between 0-3 months studying, and 0-6 months in Sweden. Swedish proficiency was between pre-A1 to early B2 for all learners, all of whom identified still as 'beginners'. Participants exhibited a wide range of multilingualism where, in fact, monolingual speakers were the overwhelming minority. Native languages were mostly from Germanic or Romance-language roots but were considerably diverse across the entire sample. The table below breaks down the participant sample's demographic information.

Table 27: *SVLSS 1.2 Pilot Participant Demographic Information.*

N = 182

Education		**Swedish Proficiency**		**Multilingualism**		**Native Languages**	
High School, Some College	39	None	23	Monolingual	7	Germanic	72
Bachelor's Degree	66	A1-A2	108	1 additional language	75	Romance	40
Master Degree	50	B1	51	2 additional languages	52	Slavic	24
Doctoral Degree	27	C1+	0	3+ additional languages	48	Other	46
Age Group		**Time spent studying Swedish**		**Time spent living in Swedish language environment**		(Includes small groups (< 5) of *Persian, Urdu, Dari, Finnish, Hungarian, Greek, Cantonese, Chinese, Thai, Latvian, Lithuanian, Japanese, Vietnamese, Turkish, Indonesian, Arabic*)	
18-23	63	0-3 months	96	0-6 months	93		
24-29	65	4-6 months	22	7-12 months	45		
30+	54	7-12 months	32	13+ months	43		
		13+ months	30				

Factor scores obtained from EFA indicated a six-construct solution with regards to the underlying construct system of the SVLSS instrument. Examination of the factor loading scores across constructs helped to guide an initial VLS taxonomy for the SVLSS item list. Item lists were determined using factor loading scores, and then revised according to item fit using low and multiple factor loading scores. The six VLS constructs chosen were; Cognitive memorization strategies, Depth enhancing strategies (via use), Context- and association-based strategies, Depth enhancing strategies (via sources), Self-regulation and reflection strategies, and Lexical information strategies. Each classification is described in section 3.5.2.2, and in greater detail in article II.

Table 28: *Most and Least Reported VLS.*

Item	High Use	Mean	SD
8	Look up word meaning/details in dictionary.	4.39	1.00
24	Use cognates to learn/remember words.	4.35	.995
11	Guess lexical information according to previous knowledge	4.34	.802
69	Look up words founds in everyday life	4.19	.976
9	Compare Swedish to other languages known when learning vocabulary	4.19	.976
28	Connect Swedish words to native language words	4.15	1.20
14	Pay attention to useful/interesting words found in everyday life	4.09	.881
Item	**Low Use**	**Mean**	**SD**
16	Describe words in TL without saying the word	1.93	1.21
3	Watch Swedish TV without subtitles to learn vocabulary from context	1.93	1.16
51	Label items in immediate context to review often	2.04	1.34
49	Create mnemonic phrases to assist learning	2.14	1.31
4	Review words in study groups	2.14	1.23
46	Write down lists of grouped words over and over	2.23	1.24
48	Use word lists to quiz self	2.24	1.34

Reported VLS use was described on a whole population basis as a means of exploring a 'first look' at addressing research question 1 of this project regarding 'what VLS Swedish L2 learners use'. Learners reported a very high use of VLS across the entire item pool, with an average reported strategy use of 3.25 (*SD* = 0.63) out of a possible 5.0. This suggests that learners participating in the study were experienced language learners and users, which is only supported by the high reported levels of multilingualism and educational backgrounds in the population sample. The most used (*M* = over 4.0 out of a possible 5.0) and least used (*M* = under 2.5 out of lowest score of 1.0) strategies included looking

up words in dictionaries, cognate use, guessing from previous knowledge, and comparing Swedish word knowledge to word knowledge in other known languages. Less frequently used VLS included more highly specific strategies such as describing words in a TL without saying the word itself, watching TV to collect new vocabulary information, labeling items with their Swedish words, using mnemonic phrases, or reviewing vocabulary in study groups.

Other key discoveries made during analysis of collected data concern issues with the SVLSS item pool that were detected with guidance from EFA results. Many items were seen to cross-load onto two or more of the six constructs, with three major problems emerging linked to cross-loading: Some items could ostensibly be a part of two or more VLS categories according to interpretation of the item statement, some items were too specific to fit into any single VLS category, and some items were worded in a way that was too vague resulting in either multiple VLS being represented in a single statement, or none being represented. These problematic item statements were revised according to three methods: some items were rewritten to clarify the core VLS concept intended for representation, some items that were similarly worded were differentiated, and some items that did not represent strategic behavior were deleted. These changes resulted in the overall readability score (FRE) of the SVLSS increasing from 65 to 72.5 (further detail in section 3.5.2.3).

Findings and implications for article II are mainly related to the design and revision of the SVLSS instrument. These findings and subsequent revisions to the SVLSS 1.2 are reported in detail in section 3.5.2.4.1. Data collected was not used to attempt describing the reported VLS use by the participant sample. However, it should be noted that instrument validation measurements in this study are restricted to the particular data collected from this sample, and extension of interpreted results with regards to the participant population should be limited (Osbourne 2014).

That said, the six emergent VLS categories that characterize the SVLSS indicate that the instrument did seemingly represent underlying constructs related to theoretical classifications of VLS seen elsewhere in VLS taxonomy. However, not all item-construct relationships were completely appropriate, and factor loading scores did not indicate clean divergence of constructs across item groups. This suggested that the instrument item pool did not represent entirely clear VLS constructs, and that the refinement and application of a VLS taxonomy could be applied to the organization of the VLS item pool of the SVLSS. In this way, the emergent six-category VLS model extracted through EFA would provide an initial structure with which to move away from the initial data-driven, bottom-up instrument design, towards an instrument that would be anchored by other familiar VLS taxonomy, and revised using top-down methods adhering to said models. These considerations are what

motivated the VLS taxonomy comparative review undertaken in study 3 (article III) that sought to further examine and revise the underlying VLS construct structure of the SVLSS instrument.

4.3 Article III

The third study of this project (article III) represents a follow-up to results and implications from study two that sought to address theoretical issues with the SVLSS 1.2 instrument. The purpose of study 3 was to situate the SVLSS instrument amongst other VLS lists and their related taxonomic structure in order to guide revision of the VLS taxonomy and item lists that would be included a new version of the SVLSS (2.0). This comparison was facilitated through a review of the most influential VLS taxonomy alongside their respective strategy lists and questionnaire instruments. This review examined the methods used to arrive at VLS lists and taxonomy, the theoretical underpinnings of each list, and the ways that methods and theory served to contribute to the design of VLS data collection instruments. These findings were then viewed in relation to the SVLSS 1.2 instrument, and then used to navigate revisions to the VLS classification system and representative VLS item lists, which in combination with revisions based on EFA results from study 2 (article II), would result in the SVLSS 2.0.

The review of other VLS studies (Gu & Johnson 1996; Nation 2013; Schmitt 1997; Stoffer 1995) indicated that there was divergence between instruments in the way their methods for VLS item list generation and classification were performed and reported. Schmitt (1997) reported clear, step-by-step methods for item list creation, and then arranged VLS items according to an adapted LLS taxonomy derived from Oxford's (1990) six-category model, that further divided strategies into those used to find new word knowledge, and those used to consolidate already known word knowledge. Gu and Johnson (1996) reported nearly no methods regarding item list generation, but did express that the population of their VLS list was through a pre-determined VLS taxonomy that they built which incorporated many areas of learning strategies performed exclusive for vocabulary learning. Stoffer (1995) reports on her methods for item list creation, then classified her VLS list through bottom-up procedures, employing EFA to guide the process.

The classification system for each VLS list were compared alongside each other in order to examine them for similarities. The VLS taxonomy comparison demonstrated that theoretical categories could be used to group together types of VLS used for specific purposes (for descriptions of VLS taxonomy included

in this comparison, see section 2.2.3.2). Using this comparison (see figure 9 below), a new taxonomy intended to govern revisions for the SVLSS 2.0 was offered. The new taxonomy made use of vocabulary learning theory as related to Nation's (2013) VLS taxonomy to help scaffold organization, resulting in a four-category system. The categories include: Strategies for improving word knowledge (split into two sub-categories – rehearsal strategies and encoding strategies), Productive activation strategies, Strategies for establishing new word knowledge (split into two subcategories – source strategies and context strategies), and Strategic self-regulation strategies. This taxonomy was used to revise the SVLSS instrument with regards to the items it included (see section 3.5.2.4.2). Several items from the SVLSS 1.2 were deleted as a result, mainly those that did not represent any strategic behavior in the taxonomy, or that were deemed to be vocabulary learning beliefs or learning styles – not strategies themselves

<table>
<tr><th>SVLSS 1.2</th><th>SVLSS 2.0</th><th>VOLSI</th><th>VLQ</th><th>Schmitt</th><th colspan="2">Nation</th></tr>
<tr><td rowspan="2">Memorization Strategies

(Lexical information strategies)

(Context & Association Based strategies)</td><td>STRATEGIES FOR IMRPOVING WORD KNOWLEDGE (Rehearsal)</td><td></td><td>Memory Strategies: Rehearsal</td><td>Memory Strategies
Cognitive Strategies</td><td rowspan="3">Processes: Noticing, Retrieving, Generating</td><td rowspan="5">Skill in use: Enriching Knowledge</td></tr>
<tr><td>STRATEGIES FOR IMPROVING WORD KNOWLEDGE (Encoding)</td><td>Create Mental Linkages
Visual/Auditory
Physical Action
Organize words</td><td>Memory Strategies: Encoding</td><td></td></tr>
<tr><td>Depth Increasing Strategies (via Use)</td><td>PRODUCTIVE ACTIVATION</td><td>Authentic Language Use
Creative Activities</td><td>Activation Strategies</td><td>Social Strategies</td></tr>
<tr><td rowspan="2">Depth Increasing Strategies (via Sources)</td><td>STRATEGIES FOR ESTABLISHING NEW WORD KNOWLEDGE (Sources)</td><td rowspan="3"></td><td>Dictionary Strategies

Note-taking Strategies</td><td>Determination Strategies

Social Strategies</td><td rowspan="3">Sources: Finding information about words</td></tr>
<tr><td>STRATEGIES FOR ESTABLISHING NEW WORD KNOWLEDGE (Contexts)</td><td>Using Background knowledge/wider context

Using linguistic cue/immediate context</td><td></td></tr>
<tr><td>Self-regulation & reflection</td><td>STRATEGIC SELF-REGULATION</td><td>Self-motivation

Overcome Anxiety</td><td>Selective Attention

Self-initiation</td><td>Metacognitive Strategies</td><td>Planning: What to focus on and when</td></tr>
<tr><td></td><td></td><td></td><td>Beliefs about vocabulary learning</td><td></td><td></td></tr>
</table>

Figure 9: *Comparison of VLS Taxonomy to SVLSS 1.2/2.0.*

These revisions were intended to re-establish the instrumentation methodology for the SVLSS (2.0) as top-down, using the new model as a guide for item retention, revision and deletion in order to best adhere to the chosen taxonomy. This was done in order to establish an instrument with clearer item-construct representativeness built upon a theory-anchored system, albeit one that has

emerged through an essentially context-situated development process. This bottom-up-then-top-down instrumentation process was chosen as a means of allowing data-driven influence from the target audience in the creation of the instrument intended for them, but then re-structuring said instrument in order to bootstrap as reliable a construct structure as possible as represented by its item pool.

A full description of all changes made to the SVLSS instrument resulting from the above findings and implications can be viewed in section 3.5.2.3.2.

4.4 Article IV: Individual Differences

The research performed that constituted article IV sought to better understand the target demographic group for this research project, adult Swedish L2 learners, in terms of their individual differences related to their beliefs of what vocabulary knowledge is crucial for them to 'know' words. As a means of doing so, data was collected from the target demographic through the use of text responses to open-ended questions included on certain iterations of the SVLSS instrument (see section 3.3.4).

The SVLSS 1.2 asked the question, 'What do you think it means to know a word?' (*'What information is important for a word to be 'known'?*) in order to probe what Swedish L2 learners believe to be the most important features of word knowledge.

Participants of this study were also participants in study 2 (article II), as the open-ended question was included on the same data collection instrument used therein. However, the open-ended question was voluntary, resulting in a reduced sample size. Participants in this study were quite diverse in terms of all demographic information: education background, Swedish proficiency, and native languages. Also, time spent studying (M = 10 months, SD = 20.2) and time spent living in a Swedish language environment (M = 14 months, SD = 22.44) were quite diverse (cf. article II). Multilingualism of participants was high, as only a single monolingual language user was involved in the participant sample. Such diversity was encouraged for this study, as it sought to perceive the Swedish L2 learner context in its full complexity, rather than focusing on a singular learner group. The table below breaks down the demographic information collected for participant sample.

Table 29: *Participant Demographic Information for article IV.*

N = 111

Education		Swedish Proficiency		Multilingualism		Native Languages	
High school	21	None	15	Monolingual	1	Germanic	46
Associate Degree	3	A1-A2	60	1 additional language	44	Romance	21
Bachelor Degree	34	B1-B2	26	2 additional languages	34	Slavic	20
Master's Degree	37	C1-C2	10	3+ additional languages	32	Other	30
Doctoral Degree	16						

Average Age	Average Time spent studying Swedish	Average time spent living in Swedish language environment
28 yr. *SD* = 8.69	10 mo. *SD* = 20.2	14 mo. *SD* = 22.44

Note: See appendix 9.1 for native language group breakdowns used here.

Responses to 'What does it mean to know a word?' were collected and compiled, then subject to a content-analysis procedure that sought to code the data for word knowledge features mentioned by participant responses. Word knowledge features were defined using Nation's (2013) *form, meaning, use* word knowledge taxonomy prior to data coding (section 2.1.5). A content analysis procedure was followed that tagged mentioned vocabulary knowledge, performed axial coding for patterns of knowledge sub-categories, then repeated coding to ensure reliability of axial categorization (see section 3.4.1.2 for more on this analysis procedure).

Results from the content analysis provided a quantitative illustration of the most (and least) salient word knowledge features according to the participant sample. This illustration is founded on the assumption that the responses collected represent learners' beliefs regarding what the most important aspects of word knowledge are *for them,* but certainly do not represent what learners consider to be word knowledge in an exhaustive sense. The findings therefore suggest that participants may find spoken and written forms of words, the meaning of words, the use of words in the correct register, and grammatical function of words to be the most important features to be learned in order to 'know a word'. On the other hand, collocational knowledge and meaning-linked associations and forms were the least salient features of word knowledge. Participants also indicated favorability to express word knowledge in

'can do' statements, indicating that 'knowledge' is only 'known' when it can be used in a productive or communicative fashion.

Interestingly, a group of responses indicated that certain knowledge features were more important than others to 'know a word', suggesting that these learners are likely to attend to some word knowledge features, and ignore others – an important finding that could easily be transferred to diagnostic instruction in the Swedish L2 classroom. For example, the use of simple surveys like the one used in this study regarding vocabulary knowledge beliefs in Swedish L2 classrooms might serve to better illustrate learners' needs as related to what vocabulary information they find most useful. This can increase motivation and engagement in learning. Alternatively, this information can serve a diagnostic purpose in providing the practitioner information pertaining to gaps between learner expectations for vocabulary learning and teacher's expectations. Such information can act as the first step towards either bridging these gaps in expectation or shifting expectations for either party in order to establish a more meaningful learning experience for the language learner. Furthermore, vocabulary learning beliefs have been shown to influence learners' behavior (Dahl, Bals & Turi 2005), and thus the above findings should be taken into consideration when interpreting the learning approaches and practices of adult Swedish L2 learners' vocabulary acquisition.

4.5 Report I: VLS Use Patterns and Profiles

The final study of this project sought to use the SVLSS 2.0 instrument to carry out a large-scale collection of reported VLS use data from adult, beginner Swedish L2 learners studying Swedish at higher education institutes in Sweden. This work was intended to address the original motivating research question grounding this project: *What vocabulary learning strategies do adult, beginner Swedish L2 learners use?*

The approach used for this study sought to collect data as a means of establishing VLS use patterns and learner profiles connected to the target demographic. Collected data was analyzed and interpreted through the use of descriptive statistics, analysis of variance tests to compare VLS use across various participant groups, and a cluster analysis to probe the data set for potential learner profiles with regards to demographic information and reported VLS use.

An updated VLS taxonomy was used in the organization of the SVLSS 2.0 that is based on revisions made to the SVLSS from article II and III, as well as a meta-analysis performed of other VLS taxonomy used in the field for questionnaire design (article III). The VLS taxonomy used is a four-construct model

(improving word knowledge, establishing word knowledge, productive activation, and self-regulation) that includes six categories of VLS: rehearsal strategies, encoding strategies, activation strategies, source strategies, context strategies, and self-regulative strategies. All items on the SVLSS 2.0 were arranged into lists according to each of these classification groups prior to distribution.

The participant sample for this study was, like other participant samples in this project, diverse in many demographic aspects. However, for this group, the majority of participants reported: ages under 25 years old, a mostly limited exposure to Swedish language study and time spent in Swedish language environments, and a low overall Swedish proficiency. Most learners possessed some degree of multilingualism, and although native languages were diverse overall, languages from a Germanic background (i.e. English, German, Dutch) dominated the linguistic background for the sample. The table below breaks down the demographic information for the participant sample.

Table 30: *Participant Demographic Information for Report I.*

N = 401

Education		**Swedish Proficiency**		**Multilingualism**		**Native Languages**	
High School and Some College	134	None	102	Monolingual	17	Germanic	187
Associates Degree	21	A1-A2	241	Bilingual	19	Romance	91
Bachelor's Degree	161	B1	53	2 additional languages	152	Slavic	23
Master Degree	51	C1+	0	3-4 additional languages	187	Koreanic	3
Doctoral Degree	31			5+ languages	26	Japonic	5
						Baltic	6
Age Group		**Time spent studying Swedish**		**Time spent living in Swedish language environment**		Indo-Aryan / Iranian	23
18-21	115	0-3 months	248	0-1 months	147	Helenic	10
22-25	152	3-6 months	51	1-3 months	101	Uralic	13
26-34	90	6+ months	61	3-6 months	51	Sino-Tibetan	24
35+	44			6+ months	61	Turkic	8
						Austronesian	2
						Semitic	6

Preliminary evaluations of the reliability and validity of the SVLSS 2.0 instrument were performed using Cronbach's alpha and confirmatory factor analysis (CFA). Findings indicated relatively strong reliability for item categories in the SVLSS 2.0, but CFA results were inconclusive regarding a confirmation of the underlying factor structure for the SVLSS 2.0. Detailed reporting on these findings can be viewed in section 3.5.2.4.2.

Swedish L2 learners in this study reported more-frequent-than-not VLS use across all categories of strategies, but the use of strategies for establishing new word knowledge were the highest (strategies that use context, M = 3.639 out of possible 5, SD = .0788; strategies that use sources, M = 3.376 out of possible 5, SD = .0691). When comparing categorical VLS use across demographic groupings, older learners (age 30+) used significantly more productive activation strategies than younger learners (age 18-21), but significantly fewer VLS for establishing new vocabulary knowledge. B1-level Swedish learners used significantly more productive activation strategies than lower proficiency groups but used more strategies for establishing new vocabulary knowledge. Learners who had studied Swedish for only 0-1 months used significantly fewer productive activation strategies and context-based strategies for establishing new vocabulary knowledge than those who had studied Swedish for longer than 6 months.

Table 31: *VLS Use Cluster Profiles.*

	Group 1	**Group 2**
N	77	274
Demographic Description	- Almost no Swedish proficiency - Less time spent learning Swedish - Less exposure to Swedish - Younger Learners	- Beginner Swedish proficiency - More time spent learning Swedish - Diversity of age groups
Significant Differences in Strategy Use	- Fewer Activation - Fewer Establishing Knowledge (Sources) - Fewer Establishing Knowledge (Contexts) - Fewer Self-regulation - More Rehearsal - Overall less strategy use	- More of all Strategy Classes excluding Improving Knowledge through Rehearsal - Overall greater strategy use

These findings were further explored through a cluster analysis that aggregated demographic and VLS use data into clustered learner profiles. Two groups of learners were revealed through the analysis. Group 1 was characterized as new, low-to-no proficiency, younger-aged Swedish learners, and Group 2 was characterized as more experienced, low-to-intermediate proficiency learners of many

ages. Group 1 used significantly fewer productive activation, self-regulatory, and word knowledge establishing VLS than Group 2. However, Group 2 reported using more strategies in general than Group 1, with the exception of rehearsal strategies. The divergence in the use of strategies by each profile group might indicate that less experience in Swedish language learning (Group 1) might serve as a barrier to the use of 'deeper processing' VLS (i.e. self-regulation, productive activation), resulting in a reliance on rehearsal and encoding strategies used to establish a baseline of vocabulary knowledge before using the more sophisticated strategies. These findings seem to support previous findings regarding VLS use and language proficiency. Namely, that as proficiency increases, so does strategy use (Chang Tsai & Chang 2009; Fan 2003; Kung & Chen 2004; Nemati 2008; Stoffer 1995). What's more, findings from this study also seem to suggest that even in the earliest stages of language learning (A1-B1; first 6 months), significant differences in VLS use can be observed between Swedish L2 learners.

4.6 Synthesis of Results from All Studies

The key findings resulting from each of the above studies can be summarized through organization into three strands: Instrumentation and methodological findings (4.6.1), theoretical and taxonomical findings (4.6.2), and findings regarding the reported VLS use by Swedish L2 learners (4.6.3).

The findings summarized in section 4.6.1 and 4.6.2 relate directly to the first four directive purposes of this research project (see section 1.3.2). They address the design of a questionnaire instrument built with data collected from the target demographic and intended for use with the target demographic, a review of other relevant VLS questionnaires that would situate the new questionnaire, evaluations of the new questionnaire with regards to a transparent report of methods used and processes undertaken, and the proposal of VLS taxonomy that can provide adequate coverage of strategy types that are relevant to the target demographic and that are reliable with relation to other taxonomy.

The findings summarized in section 4.6.3 seek to address the three larger research questions motivating this research project (section 1.3.2). They ask,

1. What VLS do L2 Swedish learners report using?
2. What individual differences can be observed that may contribute to better understanding of L2 Swedish learners as students of Swedish vocabulary?
3. What patterns, if any, exist in the reported use of VLS L2 Swedish learners?

Findings from the five completed studies of this project relevant to addressing the above overarching directive purposes and research questions are summarized below. Deeper considerations regarding implications for these findings are discussed in section 5.0.

4.6.1 Instrumentation and Methodological Findings

Exploring the instrumentation processes regarding questionnaire creation for application in the field of Swedish L2 VLS use has represented a main thrust of investigation throughout nearly all studies performed. Furthermore, adherence to clear and transparent reporting of instrumentation processes was decided upon at the outset of this research project in order to provide context to collected and analyzed data, and to show the reader as precisely as possible, 'where the results come from'. This project sought to design and create an instrument made specifically to collect VLS use data in the adult Swedish L2 learning context using a bottom-up process that used data collected from the target demographic and intended for distribution to the same demographic. This intention resulted in several steps that led to the development of the SVLSS 2.0, the most current iteration of the instrument. Each step led to the next, using the findings from the previous step to motivate and contribute to the next developmental iteration.

It should be noted that both top-down questionnaire design as well as a bottom-up design are plausible procedures that can lead to the population of questionnaire item pools used to measure participant response to certain underlying constructs. The major divergence between the two methods is whether a construct taxonomy is pre-determined and thus item generation and revision are performed in order to representatively match the pre-determined constructs (top-down), or if item generation is performed without presuming underlying construct organization (bottom-up), allowing collected data to inform what the shape and nature of these constructs are. In this sense, both methodological styles strive for a resulting instrument populated with items that represent a specific system of underlying concepts intended for measurement. However, the design method chosen will surely have repercussions for the items generated and therefore the representativeness of those items.

In other words, the methods used to develop an instrument will influence what the items *actually* represent and measure, as opposed to what they are *intended* to represent and measure. A bottom-up approach may be somewhat 'fuzzier' with regards to what an item list actually represents due to the considerable amount of interpretation required to determine underlying construct systems through, for example, EFA. However, in spite of this, and because no

existing VLS taxonomy related specifically to the Swedish L2 learning context had been offered by the field, a bottom-up procedure was chosen to operationalize this research project.

Reasoning for this methodological choice was anchored in the thinking that a bottom-up process would result in the generation of an underlying VLS classification system that would be more closely related to the target demographic and context, rather than a top-down process that would necessitate the adoption of a pre-existing VLS taxonomy *not* directly related to the target demographic and context. What follows are findings from the use of this process that seek to show that the adoption of the above methodology has indeed resulted in the intended results regarding an instrument created for VLS use data collection, shaped by and made for by the target context.

In article I, loosely following instrumentation considerations from Stoffer's (1995) VOLSI design as well as methodologies from Barcroft (2009) and Mackey and Gass (2012), item pool generation for the first iteration of the SVLSS was facilitated through recording, transcribing, then content-analyzing interview and learning task data. The interview structure, learning task structure, and individual differences between learners likely influenced the collected data set (see section 3.5.1). However, analysis of this data returned an initial list of 74 VLS items that were used to populated the SVLSS 1.0 (section 3.5.2.1). Piloting of this first iteration indicated some issues with word choice, statement wording, and VLS representativeness (section 3.5.2.2). Some of these issues were resolved through revisions (section 3.5.2.2), but many of them reappeared following validity and reliability evaluations performed in article II (section 3.5.2.3).

The chosen method of investigating the validity of the SVLSS 1.2 (post-pilot iteration) construct structure was EFA due to its exploratory nature and common use in other learning strategy questionnaire validation research (Oxford 1990; Stoffer 1995; Gu 2018). From article II, EFA findings suggested the adoption of a six-construct factor structure for the SVLSS 1.2, and it was used to establish a preliminary interpretation of the VLS taxonomy represented by the SVLSS. This taxonomy (see section 4.6.2), alongside EFA factor scores, was employed as a means of organizing the SVLSS 1.2 item list into six VLS categories. Then, using cross-loading of factor scores as a guide to explore possible issues with the SVLSS 1.2 item lists, three core problems with item statements were identified and addressed regarding classification and specification of VLS concepts. Items were revised for better fit to the VLS category of best fit, language clarity, and conceptual clarity. Items that could not be amended in these ways were deleted.

Further steps were taken in order to facilitate item list revisions from SVLSS 1.2 to 2.0. In article III, a comparative review of other VLS questionnaires

and their related taxonomy (Fan 2003; Gu & Johnson 1996; Nation 2013; Schmitt 1997; Stoffer 1995) was undertaken in order to situate and revise the VLS taxonomy used to organize the SVLSS. A meta-analysis of VLS taxonomy alongside considerations of the vocabulary learning process (Nation 2013) resulted in the adoption of a new four-category VLS taxonomy centered on core concepts representing strategic approaches to L2 vocabulary acquisition in terms of establishing new vocabulary knowledge, improving already known vocabulary knowledge, productive use of vocabulary knowledge, and self-regulation of vocabulary learning. The adoption of this model prompted further revisions to the SVLSS item pool, including borrowing or trading certain items from other VLS questionnaires in order to achieve stronger representation of the chosen four-category model. Aggregate revisions made to the SVLSS 1.2 item list according to EFA findings (article II) and the comparative analysis of VLS taxonomy (article III) resulted in the item pool used for the SVLSS 2.0 instrument.

In addressing the three research questions posed at the start of this project, report I sought to use the SVLSS 2.0 instrument to collect data on what VLS adult, beginner learners of L2 Swedish report using, and also to collect demographic information that could be used to explore their individual differences in VLS use. Analysis and interpretation of this data was performed to investigate the possibility of VLS use patterns or learner profiles existing in this context. Although reliability measurements for item lists for most VLS categories in the SVLSS 2.0 were acceptably high, confirmatory factor analysis (CFA) did not help to confirm (nor prove non-existence of) the assumed four-factor construct underlying the questionnaire (section 3.5.2.4.2). After making drastic changes to the SVLSS item pool between 1.2 and 2.0, perhaps performing confirmatory analysis was premature before conducting further revisions to the instrument in order to improve item representativeness.

The use of the above methodological process for creating and revising the SVLSS instrument has shown to be a useful approach for establishing a list of strategic behaviors that Swedish L2 learners actually do, and report doing, themselves (article I). This instrumentation method has also facilitated the interpretation and adoption of VLS classification groups that resemble other VLS taxonomy (article II, III). Also, this method has helped guide revision to the instrument in terms of item readability conceptualization (article II), and has prompted theoretical considerations aimed at revision linked to taxonomical comparison and item list representativeness (article III, report I). However, the use of the chosen methods for instrumentation used here also come with issues regarding influence of data collection methods on item generation, to what extent questionnaire instruments represent the actual behaviors of respondents, and the levels of conceptual fuzziness with regards to the va-

lidity of the underlying constructs in the SVLSS. These limitations will be discussed in section 5.1 and 5.2.

4.6.2 Theoretical and Taxonomical Findings

As a function of both organizing the SVLSS item list as well as to offer a means of supporting and informing the interpretation of collected VLS use data, two successive VLS taxonomy were adopted throughout development of the SVLSS instrument. The first iterations of the SVLSS (1.0, 1.1, 1.2; article I) were not originally organized using any specific VLS taxonomy, as the intention was to populate the SVLSS item pool using a bottom-up approach. However, an early, perhaps tenuous, distinction between two kinds of strategies was made during the content-analysis process used in interpreting interview and learning task event transcriptions in article I. The distinction tagged strategic behaviors (i.e. VLS) as being either 'active', performed explicitly to enhance some feature of vocabulary knowledge, or 'meta', used to help plan and regulate strategy use, to reflect upon the strategic learning process, or to regulate motivation for vocabulary learning (see sections 3.4.1 and 3.5.1).

This distinction is somewhat broad and based in Oxford's (1990) conceptualization of LLS as 'direct' (performed explicitly) or 'indirect' (performed implicitly) in nature. However, conceptual considerations made with regards to VLS taxonomy development after this initial study found the active/meta distinction problematic in that *all* strategies are performed intentionally and with purpose (see sections 2.2.2.1 and 2.2.3). This therefore insinuates that classifying a strategy as 'active' presumes that other strategies are 'non-active', resulting in the dichotomy drawn here to be conceptually impossible, and therefore non-adoptable. Later, more meaningful classification VLS are adopted, and 'self-regulation' strategies replace 'meta' strategies. However, the active/meta distinction was used as a means of offering preliminary insight into what kinds of strategies the target demographic reports using for vocabulary learning (section 4.1, 4.6.3). This dichotomous distinction was abandoned prior to the exploratory investigation of the underlying construct structure of the SVLSS 1.2.

Following data collection using the SVLSS 1.2 (article II), EFA indicated the possibility of a six-factor model underlying the SVLSS item pool. This six-factor model was adopted and according to EFA loading scores, item lists were grouped according to their highest and most appropriate item-to-factor scores. This resulted in the interpretation of a six-category VLS taxonomy that was used to classify the items in the SVLSS 1.2 item pool. The adopted VLS categories reflect components of other VLS seen in SLA research, notably

Nation's (2013) taxonomy (section 2.2.3.2) involving strategies for processing and retaining vocabulary knowledge (section 2.2.3.1.1), strategies that use various sources to gain vocabulary knowledge (section 2.2.3.1.2), strategies for planning one's vocabulary learning (section 2.2.3.1.4), and strategically performing skill-in-use activities (e.g. communication) which can lead to improved proficiency with vocabulary knowledge (section 2.2.3.1.3).

The SVLSS 1.2 VLS classification groups of memorization, lexical information, and context & association-based strategies seem to map onto Nation's processing strategies category, as most strategies included in these clusters represent vocabulary learning intended to strengthen retention and recall of previously acquired or established vocabulary knowledge through encoding (i.e. association making) or rehearsal (i.e. repetitive) processes. The depth increasing strategies (via sources) category seems to best align with Nation's strategies involving sources. Depth increasing strategies (via use) all seemed to be centered on the intentional use of previously acquired vocabulary knowledge in creative or social contexts. These strategy types seemed to best connect with Nation's skill-in-use category, which has seen representation in a variety of VLS taxonomy, such as authentic language use (Stoffer 1995), activation strategies (Gu & Johnson 1996) or social strategies (Schmitt 1997). Self-regulation and reflection strategies clearly reflected Nation's planning strategies, also commonly represented in VLS taxonomy as strategies that are used to regulate motivations, emotions, plans, choice of strategies, and use of strategies. They have been referred to as self-motivation or overcoming anxiety strategies (Stoffer 1995), metacognitive strategies (Schmitt 1997), management strategies (Fan 2003) or self-initiation strategies (Gu & Johnson 1996). These findings indicate that the collected and analyzed data from article I and II indeed seem to be representative of a range of generally accepted VLS classifications.

Although EFA results from article II provided a guide with which to establish a preliminary VLS taxonomy for the SVLSS, this model required further investigation into what degree of representation it possessed regarding other existing VLS classification and conceptualization systems. This comparative analysis was undertaken with the intention of valuing the taxonomy built from bottom-up Swedish L2 learner data collection and analysis (article I, II) by comparing it to other models that might offer VLS classifications that could complement, augment, or enrich those already adopted in the hopes of achieving a more well-rounded and valid representation of possible VLS that learners may report using.

A comparative analysis of several VLS taxonomy was performed, resulting in the revision of the SVLSS 1.2 VLS taxonomy (article III). A new four-category VLS taxonomy was proposed, and would be used to restructure and revise the SVLSS 2.0 item list. The SVLSS 2.0 VLS taxonomy used Nation's VLS tax-

onomy based on stages in the vocabulary acquisition process as a scaffold with which to focus reorganization and revision of SVLSS 1.2 items. Memorization strategies became 'rehearsal strategies for improving word knowledge' in the new model, and lexical information and context & association-based strategies were organized into 'encoding strategies for improving word knowledge'. Both of these categories fall under the larger classification of 'strategies for improving [already acquired] word knowledge', following in line with Nation's 'processing' strategies. Item additions to this classification were inspired by items from Gu and Johnson's (1996) VLQ, Schmitt's (1997) VLS taxonomy, and Stoffer's (1995) VOLSI. Depth increasing strategies (via use) were reconceptualized as productive activation strategies, leaning into the strategic creative or generative *use* of word knowledge as a means of improving one's skill and competence with creating output, and of receiving input from other interlocutors regarding the accuracy or fluency of word knowledge used. Another larger classification, 'strategies for establishing new word knowledge' was created with the influence of Nation's 'finding information about words' strategy category. Strategies that use discrete [material or social] sources, as well as strategies that draw from contextual information for establishing new word knowledge are organized here from the SVLSS 1.2 category of depth increasing strategies (via sources), as well as some strategies from context & association-based strategies, after revision. Additional items were added to these categories from the VLQ, the VOLSI and Schmitt's taxonomy as a means of expanding VLS representation coverage (see section 2.2.3.2 for a survey of these taxonomies). The final VLS classification, after deletion of SVLSS 1.2 items (section 3.5.2.4.1) representing learning beliefs, styles and reflections (not necessarily *strategic* behaviors), became 'strategic self-regulation' in the SVLSS 2.0 taxonomy, and was augmented with items from the VOLSI and VLQ. The outcome of this taxonomy revision resulted in a new 69 item list for the SVLSS 2.0 that spanned four larger VLS classifications (six in total including sub-classes).

The updated SVLSS 2.0 was distributed to Swedish L2 learners as a means of collecting data on their VLS use in order to investigate possible patterns or learning profiles in relation to learners reported VLS use, as well as to explore preliminary validity and reliability measures for the instrument (report I). The implications of a chosen VLS taxonomy on instrument design as well as on data analysis and interpretation is addressed in detail in sections 5.1 and 5.2.

4.6.3 Reported VLS Use by Swedish L2 Learners

The findings summarized in the two above sections regarding instrumentation methods and VLS taxonomy can be considered stabilizing groundwork to conceptually and schematically anchor instruments used for collecting data on Swedish L2 learners VLS use. Those two above sections also represent work performed aimed at facilitating interpretations of said collected data in order to express coherent and organized findings therein. In short, the methodological and taxonomical findings of this project form a foundation upon which the main research questions can be addressed.

4.6.3.1 Research Question One

The first research question of this project concerns what VLS Swedish L2 learners report using. Findings from article I, article II and report I contribute to addressing this question. Using transcriptions of interviews and learning task events held with Swedish L2 learners, a total of 73 discrete VLS were extracted through several rounds of coding using content analysis procedures (article I). At the time of reporting, these strategies were tagged as 'active' (performed to explicitly enhance vocabulary learning) or 'meta' (used to regulate strategy use, reflect on learning, or regulate motivation/emotions). Participants in this study reported on the use of many strategies – they elicited an average of 41 different strategies per interview/learning task event. Of these, elicitation of 'active' strategies was higher (29 per participant) than 'meta' strategies (14 per participant) on average. This might indicate that the beginner, adult learners interviewed tend towards the use of more explicit VLS to acquire Swedish L2 vocabulary, however, they are more likely to be a result of the method of data collection used and represent a combination of context-based VLS use and choice rather than portraying a wholly accurate representation of the frequency or types of VLS used by learners in their 'everyday' learning processes (section 4.1).

Article II collected learners' reported VLS use data through distribution of the SVLSS 1.2 in order to first interpret, and then explore the reliability, validity and possible weaknesses of the instrument's underlying construct structure according to its chosen item pool. Collected data regarding VLS use indicated that this group of learners used more strategies than not, reporting an average strategy use of 3.25 out of 5. This high average indicates that these learners report using a variety of strategies that is more diverse, rather than relying heavily on only a few specific strategies. In fact, even when participants were grouped by certain demographic factors (e.g. age, education background, degree of multilingualism), all average reported strategy use remained between

3.02 and 3.48, indicating a potentially homogeneous group with regards to the variety of VLS used.

The most reported VLS used by the population sample were characterized as strategies for looking up the meaning of words (e.g. in dictionaries), using cognates or previously acquired lexical knowledge to help guess or aid vocabulary learning, and comparing Swedish word knowledge features to word knowledge found in other languages. These strategies perhaps represent highly salient aides to vocabulary acquisition that are considerably necessary for any word learning to occur. Namely, these strategies seem to all reflect the VLS classification of establishing word information (through sources or guessing), established in the SVLSS 2.0 VLS taxonomy (also see section 2.2.3.1.2). The least reported strategies were characterized by strategies that are perhaps too specific and therefore unrelatable to many learners. These were VLS such as describing a word in the TL without saying the word itself, watching TV to collect word information, labeling items in the TL to review them often, use of certain mnemonics, and studying in groups.

Report I collected Swedish L2 learner VLS use data through distribution of the SVLSS 2.0. On average, learners reported using more VLS on average than not (M = 3.11 out of 5.0) indicating again a wide range of VLS use by the sample, and perhaps pointing towards a highly motivated and experienced group of language learners.

Analysis and interpretations of collected data were organized using an updated VLS taxonomy reflecting categories of strategies for establishing word knowledge (sources & contexts), improving acquired word knowledge (rehearsal & encoding), productive activation, and self-regulation of learning. Using these classifications, descriptive statistics show that the most used strategies were both strategy sub-groups for establishing new knowledge - through context (M = 3.6, SD = 0.78) and through sources (M = 3.38, SD = 0.69). The least used strategies were both sub-groups of strategies for improving already acquired knowledge – through rehearsal (M = 2.7, SD = 0.65) and through encoding (M = 2.94, SD = 0.56).

Exploring these findings somewhat further, the individual VLS that were reported most used seemed to echo the most used strategies found in findings from article II. Relating TL word knowledge to other word knowledge in other languages, cognate use, looking up word knowledge in dictionaries, and paying attention for useful Swedish words were the most used VLS reported in report I, and were each likewise found in the most used VLS reported in article II. Similarly, the strategies reported least used in report I (i.e. labeling items, composing creative works to use vocabulary, using flashcards, and using memorization techniques) reflect again the somewhat 'overly niche' strategies that were found to be reported least used in article II.

Two separate population samples who participated in two separate iterations of the SVLSS at different times each provided responses that indicated more frequent use of strategies for establishing new word information through various sources or through using context to help them guess or extend already acquired knowledge. The implications for these findings will be addressed further in the following sections on research questions two and three (sections 4.6.3.2, 4.6.3.3).

4.6.3.2 Research Question Two

The second research question of this project shifts focus away from the target demographic's generalized VLS use, and turns towards exploring the relationship between their VLS use and differences between individual learners and learner groups. Findings from article IV and report I contribute to addressing this area of interest with regards to what learners believe in terms of Swedish L2 vocabulary learning, and their VLS use according to certain demographic grouping factors.

Collected written responses to the open-ended questions, 'What do you think it means to know a word? What information is important for a word to be 'known'?' were analyzed and interpreted using a content analysis procedure supported by Nation's (2013) word knowledge taxonomy (article IV, section 4.4). Swedish L2 learners' responses expressed their beliefs of which word knowledge features were most important (i.e. most salient to them) to 'know a word'. These responses were able to be categorized into Nation's *form, meaning, use* word knowledge model (section 2.1.5) during analysis.

All three categories of word knowledge were reported with fairly even frequency, indicating that all major categories of word knowledge seem important for learners during vocabulary acquisition. However, the most oft-expressed word knowledge forms constituted the spoken and written *form* of words, as well as *meaning* in a general (and variety of other) sense(s). This suggests that the target demographic tends to value how a word is spoken and spelt and what the word means as the most important, and therefore likely first, word knowledge features to acquire when learning in order to consider themselves as 'knowing' a word at all. It was also found from analysis that sampled participants frequently expressed that being able to use words and associated vocabulary knowledge appropriately, 'in the right place, at the right time, and in the right way' represented 'knowing a word'. Connected to this, learners seemed to express word knowledge not only as common knowledge features, but as ability-based 'can-do' statements, such as being able to 'use a word in a way that a native speaker understands'. This seems to indicate that learners value com-

municative (i.e. productive) competence with vocabulary knowledge, and even require possession of some level of productive proficiency with words in order to consider vocabulary as 'learned'.

The findings from article IV connect to findings from research question one, suggesting that the VLS that beginner, adult Swedish L2 learners report using are perhaps performed commonly to satisfy the learning of what they believe to be the most salient features of word knowledge to them, spoken and written form and meaning. In article II and report I, findings indicated learners using strategies for establishing new word knowledge through various sources and contexts. Perhaps the findings from article IV provide an illustration of the *kinds* of word knowledge that are being most commonly established through strategy use – such as written and spoken word form, and word meaning. Finding and establishing word knowledge requires salient word features to attend to for learning, and if these are the most salient for 'knowing a word', it does not seem an overextension to link these two concepts.

Furthermore, learners valuing of automaticity and 'can-do' abilities or skills regarding their belief of what it takes to 'know a word' can be connected to report I findings that the second tier of strategies most reported as used included productive activation and self-regulative strategies. If learners value the concept fluent vocabulary knowledge use in order for a word to be 'known', it would follow that they would also value and therefore use more communicative, productive strategies to facilitate development of these skills. Implications and further discussion for these connections with regards to pedagogical application are found in section 5.4 and 5.5.

Also contributing to addressing research question two are findings from the analyses of variance performed on learners reported VLS use across different demographic groups that emerged from participants' provided demographic information. Only significant differences between groups' use of the six VLS classifications were reported. The demographic groups that exhibited significant differences involved learners' age, Swedish proficiency, and time spent learning. Those that did not exhibit significant differences were learners' degree of multilingualism, native language(s), and time spent living in a primarily Swedish speaking environment. Learners over the age of 30 reported using significantly more productive activation strategies, but fewer strategies for establishing new vocabulary knowledge (both from sources and contexts) than learners under the age of 21.

This finding is somewhat contrary to those presented by Lee and Oxford (2008) who found that more adult learners tended to rely more on planning, organizing and evaluation strategies (self-regulation strategies), where younger learners tended towards social strategies (productive strategies here). Furthermore, learners with Swedish L2 proficiency levels of B1 used significantly

more productive activation strategies and more strategies for establishing new vocabulary knowledge (sources and contexts) than A1, A2 and pre-A1 proficiency learners. Also, learners who had only spent 0-1 months studying Swedish used significantly fewer productive activation strategies and strategies for establishing new vocabulary knowledge through context than those learners who had studied for more than 3 months. In sum, older, more proficient Swedish L2 learners who have studied for at least a few months reported using more strategies that rely on production than younger, less proficient, earlier starting learners. However, older, lower proficiency and early start learners reported using fewer strategies for establishing new vocabulary knowledge.

The implication here seems to be that the higher a learner's proficiency and the longer the time spent learning Swedish as a second language (and assumedly by extension greater vocabulary size, breadth, depth), the higher a learner's reliance on strategies that activate vocabulary knowledge in a creative, communicative, productive way. These findings are consistent with those seen from Oxford and Nyiko's (1989) who found that learners who spend more time with a language tend to use more communicative strategies. This may also be linked to the valuation of word knowledge fluency and ability to use this knowledge in appropriately communicative ways, as seen in results from article IV. However, this valuation cannot be fully acted upon until a learner has acquired a sufficient amount of vocabulary knowledge with which to actually use in active production, hence the significant difference in productive strategy use between high and low proficiency and time spent learning groups. In other words, the more words learners know, the more words they can learn (Nation 1990).

What is surprising is that older learners use more productive strategies, but fewer strategies for establishing new vocabulary knowledge. Some assumptions to offer as to the nature of these findings could relate to both degree of effort, and the granularity of demographic groupings. First, at the most nascent stages of learning a language as an older, experienced language learner, taking the time and effort needed to 'sit down and study' a language might be beyond the scope of expectations of a busy adult lifestyle. Thus, these learners may prefer to 'learn by doing', valuing communicative, productive language use over traditional forms of study. Older L2 learners tend to be highly motivated learners with specific motivations for learning (e.g. career, relationships, social integration), and might therefore take what is learned in classroom settings directly to the context for which Swedish is being learned, using it productively to expand knowledge and proficiency in that context. As such, strategies for establishing new vocabulary knowledge, which are the most used strategies by lower proficiency learners in article II and report I, may be neglected in favor of 'using vocabulary to learn more vocabulary' through productive means. Conversely, age

groupings in this study (chosen through convenience) may simply provide far less granular division lines across the sample within ANOVA assessments, resulting in the 30+ year old learner group returning results similar to both lower proficiency/0-1 months studying and higher proficiency/3+ months studying learner groups.

A final interesting point to note is related to the other demographic variables that did not indicate any significant differences in VLS use between learners. Throughout the learners surveyed in for the research purposes in this project, there were significant differences between individuals regarding age, proficiency, time spent in contact with the TL, and time spent learning the TL. However, no significant differences were found related to learners' native language or their degree of multilingualism. This is somewhat surprising, as previous work into LLS use and multilingualism has shown that multilingual learners typically exhibit more effective (Nation & McLaughlin 1986), more frequent and more varied use of strategic language learning (e.g. Psaltou-Joycey & Kantaridou 2009).

The reasons behind a lack of evidence for divergent VLS use across these differences are unclear. Perhaps native languages were overly disparate or low in numbers to return statistically interesting findings, or perhaps the grouping of L1s into language families did not accurately represent potentially nuanced differences between how users of various L1s approach VLS use. It is also plausible that the grouping choices made regarding learners' degree of multilingualism were too simplistic to represent their complex relationships with the languages in their lives, resulting in inappropriate or inaccurate representations of learners' individual differences therein. Alternatively, the lack of significant findings might indicate that learners' L1s and degrees of multilingualism are less influential to their VLS use than are individual differences that are connected to the target language that is being learned itself (e.g. proficiency, time spent learning the TL) or a learners' composite life experience (e.g. age).

Extended research into the relationship between learners' VLS use and individual differences, and how they interact, would be required to better explore the considerations above and to further confirm or expand upon findings described in this section. For more on the importance of individual differences in VLS research, see section 5.4. Considerations regarding the clustering of learner groups according to individual differences and variations in their VLS use is discussed in the section below.

4.6.3.3 Research Question Three

The final research question for this project is concerned with whether there exist any relevant or significant patterns with regards to Swedish L2 learners' reported VLS use. Connections drawn between findings from article I, article II, article IV are germane to this summary, as are results from ANOVA and cluster analyses performed in report I, which has largely acted as a culminating study for this research project.

The ANOVA findings that revealed significant differences between demographic groups from the participant sample (see above section) indicated some preliminary patterns emergent from certain types of Swedish L2 learners in terms of their reported VLS use. In order to explore these patterns further, and to investigate the possible existence of learner VLS use profiles that may exist within the participant sample for report I, a two-step cluster analysis was performed on VLS use data (see section 3.4.2.4). This analysis was facilitated through the use of an updated VLS model (see section 3.5.2.4 and 4.3) to arrange responses to VLS items, as well as demographic information provided by learners on the SVLSS 2.0 instrument.

From this analysis, two fairly significant cluster profiles emerged (reported in section 4.5). Group one was characterized as having low-to-no Swedish proficiency, less time spent learning Swedish, less exposure to Swedish, and as being younger-aged learners. Group two was characterized as being beginner Swedish learners who had spent more time learning Swedish than group 1, and that possessed a variety of age groups. Group two boasted overall greater VLS use than Group one in every class of VLS used with the exception of strategies for improving knowledge through rehearsal. The significant differences seen in VLS use between these groups corresponds to previous findings that older (Stoffer 1995) and higher proficiency learners (Oxford 1990) tend to use more learning strategies with greater frequency than younger learners. However, these findings do not confirm previous findings from Devlina (1996) and Lee and Oxford (2008) who found that older learners tend to use more metacognitive strategies for language learning.

This divergence suggests that less experience in Swedish L2 learning (i.e. group one) might serve as a kind of barrier to the use of more sophisticated VLS (i.e. productive activation, self-regulation), resulting in learners relying more on rehearsal and encoding strategies to first concretize a baseline of Swedish vocabulary knowledge before accessing strategies intended to expand vocabulary knowledge (i.e. strategies for establishing word knowledge). This echoes implications for ANOVA findings described in the previous section in that the more vocabulary knowledge you possess, the more you can use it [productively, communicatively] to find exposure to, access, and ultimately learn more vocabulary

knowledge. Also, the increase in overall strategy use reported from the older, beginner proficiency, slightly more experienced learners as compared to the younger, low-to-no proficiency, early learners group helps to confirm that even at such a granular level, increased TL proficiency seems to correlate positively with increased strategy use, and vice-versa (Chang Tsai & Chang 2009; Fan 2003; Kung & Chen 2004; Nemati 2008; Stoffer 1995) and with higher levels of language learning achievement (Ahmed 1989; Griffiths 2003; Lai 2009; Lightbown 1999; Oxford & Green 1995).

The implications therein suggest that even during the beginning stages of Swedish L2 vocabulary learning (e.g. month 1, month 2, month 3 and pre-A1, A1, A2 proficiency levels) the use of VLS should be supported as much as possible in order to facilitate effective learning and vocabulary growth. Reflective, explicitly taught LLS and VLS instruction can result in more varied and frequent VLS use (Chamot 2005; Hajer et al. 1995; Mizumoto & Takeuchi 2009; Rubin et al. 2007), and improved learning achievement in language learning (Chamot 2007; Leaver 2003; Nyikos & Fan 2007; O'Malley & Chamot 1990). Further considerations regarding how to apply these implications to pedagogical contexts will be discussed in section 5.5.

5. Discussion

This section includes reflections on and implications for the overarching aims of the work, methods used in this project, theoretical and conceptual paradigms, and the composite findings from all studies performed as part of this research project. This section also includes suggestions for and considerations regarding the distribution and use of the SVLSS 2.0 instrument in pedagogical contexts.

5.1 Instrumentation and Transparent VLS Research

A central aim of this research project has been to provide transparency in the reasoning of and reporting on the instrumentation process for all instruments designed and distributed for data collection. This includes the interview and vocabulary learning task instrument (see sections 3.3.1, 3.3.2, and 3.5.1) designed and used for the initial exploration of VLS used by adult Swedish L2 learners that served to motivate the creation of the first VLS questionnaire built from the ground-up with the intention for use in the adult, Swedish L2 learner context. This questionnaire, the SVLSS, experienced several rounds of piloting, revision, and restructuring throughout this research project (see section 3.5.2, article I, II, III, and report I).

Instrumentation transparency here is conceived of as reporting on the reasoning behind decisions made regarding choice and use of instruments used for data collection purposes, reporting on the steps taken to create and revise those instruments, reporting on validity and reliability evaluations performed for those instruments, and reporting on the choice of and methods followed to analyze data collected by those instruments.

The initial reasoning behind a focus on transparency in instrumentation procedures originates from two schools of thought. First, transparency has been pursued to provide readers and further research efforts as much information and context as possible with which to view how the SVLSS was constructed (section 3.5). This includes what constructs it has been intended to measure (sections 3.5.2.3, 4.6.1, and 4.6.2), how it sought to measure these constructs (section 3.3), what analytical methods were intended to be performed on data collected by instruments (section 3.4), and the 'why' behind each of these considerations. Reporting on these areas can provide readers clarity in evaluating the aggregate findings of studies in this project with regards to the instruments used to collect the data used for analysis. Collected data can only reveal findings from what is collected – not necessarily what is *intended* for collection (Osborne 2014). In this sense, how an instrument has been created and developed through each stage of an iterative instrumentation process must be coupled with detailed reporting in order for results from the use of this instrument to be reliably understood. In other words, to comprehend the now, we must learn from the then.

Secondly, early surveys of VLS research before initiation of the studies performed in this project contributed to a focus on transparent practices. It was found that the instrumentation reporting in VLS questionnaire studies was sometimes sparse (Fan 2003; Schmitt 1997; Stoffer 1995) if not completely omitted (Gu & Johnson 1996)[14]. Although it may not be entirely appropriate to include full instrumentation records for every format of reported research findings (or even feasible considering, e.g. article length restrictions), brief or omitted reporting can lead to potentially misleading interpretations of findings by their audiences. This reasoning was used as an anchoring motivation for the work performed in this project, influencing a diversion from a nascent alternative research aim[15], and resulting in the format adopted for reporting on methods and findings.

The instrumentation methods and results reported for this project have been done so with the intention to serve future research as a kind of preliminary

14 It should be noted, however, that Peter Gu (2018) recently published updated validation and reliability measures for the VLQ instrument in a very thoughtful and transparent report. His work has continued to influence the work performed here, and much of his methods were instrumental in guiding evaluation and revision of the SVLSS.

15 An initial aim for this research project, not included in this report, was to explore the relationship between Swedish L2 learners' vocabulary size, breadth and depth and their reported VLS use. After it became clear that an appropriate instrument did not exist for collecting VLS use data, and that instrumentation records for related instruments were sparse, the focus of this project shifted to focus entirely on to this area of interest.

touchstone for future VLS research in the Swedish L2 learning context. As such, sections of the methods chapter have been organized with a mind to guide the reader towards reporting on an overview of instruments and their reasoning for selection and use (section 3.3), the analyses selected and reasonings for their use (section 3.4), and all instrumentation stages performed on developing each instrument (section 3.5). It is hoped that the transparency of this volume can contribute to a better understanding of the conclusions made by this research project regarding findings from the five studies performed, and by using the instruments described above.

However, it should be said that the 'concluding work' of this project should not represent a 'finalized' or 'valid' questionnaire in any regard. On the contrary, the findings here represent only the latest step in the development process for the SVLSS instrument. More work is to be done, specifically into reconsidering the nature of VLS as a concept (see sections 5.3, and 6.3) and the classification systems that are used to describe them (section 5.2), and exploring what future iterations of the SVLSS might look like after addressing these issues (sections 6.4 and 6.5).

5.2 VLS Classification Systems

Taxonomy provides a lens with which to organize the collection of data, interpretation of that data, and how to frame implications related to the findings therein. In this sense, varying VLS taxonomies can provide alternative perspectives on learners' VLS use when applied to data collection and interpretation.

As discussed in sections 2.2.3.2 and 3.3.3, different VLS data collection instruments represent different VLS taxonomy that act as a theoretical and representative lens that can be used to extract the conceptual foundations of the research they performed. The taxonomy establishes (1) what VLS are meant to be defined as, (2) which classifications of VLS are included and intended to be measured and represented by the instrument, and (3) which VLS classifications are relevant to the research at hand. For example, Schmitt's (1997) VLS taxonomy represents VLS as dichotomous between strategies for acquiring new vocabulary knowledge and strategies for encoding already known vocabulary knowledge. This dichotomy is further broken down into memorization, cognitive, social, determination and metacognitive strategies. The acceptance of this model for use in data collection effectively establishes that other types of VLS (e.g. strategies using background knowledge/context to establish new word knowledge) are either not considered to exist as VLS in this taxonomy,

or are outside the scope of data collection practices used to address the research questions at hand. As such, collected data is restricted to representation of the chosen taxonomy, and findings and analyses performed on data collected using this VLS classification system can only provide findings related to the scope and prevue of the chosen taxonomy. The VLS taxonomy extracted and adopted by the SVLSS instrument in this research project is subject to the same restrictions. However, awareness of this notion was addressed through adherence to a transparent instrumentation method (see above section), and through methodological considerations regarding why and how a VLS taxonomy was developed and adopted by the SVLSS (section 3.5.2.4).

As discussed in section 4.6.1, the bottom-up method adopted for instrument design and construction in this research project has resulted in the two emergent iterations of the VLS taxonomy represented by the SVLSS 1.2 and 2.0. These classification systems for VLS were certainly influenced by the target demographic and context as their structures were arrived at through the iterative analyses of iteratively collected data regarding the demographic's VLS use. This was an intended outcome following an original research aim regarding situating instrumentation and therefore data collection within the context of adult, beginner Swedish L2 vocabulary learning. Had this project utilized a top-down approach to VLS classification using a pre-existing taxonomy (e.g. Gu & Johnson 1996; Schmitt 1997) from the start, the addition of VLS items related specifically to the context would have been superficial and potentially destructive to the pre-determined VLS classifications chosen prior to initial instrument construction. In this sense, starting from the target context itself (SVLSS 1.0-1.2) and then making adjustments that helped situate the new VLS taxonomy amongst existing taxonomy (SVLSS 2.0) provided an instrument with an underlying construct system innately formed by the context, but adjusted to ensure conceptual reliability to accepted theoretical VLS conventions.

The classification system ultimately adopted by the SVLSS 2.0 represents the product of a synthesis of the aforementioned conventions, and was revised, in large part, to offer a concise taxonomy that represents four major components of vocabulary learning as related to strategy use. Those four components are finding word knowledge, improving upon previously acquired word knowledge, using known word knowledge productively, and regulating the finding, improving, producing and learning of word information, as offered by Nation (2013). This classification system was further extended to show a difference between strategies for improving upon already acquired word knowledge using encoding or rehearsal, as well as strategies for establishing new word knowledge using certain sources or contexts. This division was adopted due to these classifications being represented as conceptually dif-

ferent by other VLS taxonomy (Fan 2003; Gu & Johnson 1996; Stoffer 1995), further contributing to the adherence of previously accepted VLS classification conventions.

However, it is pertinent to note that the VLS taxonomy adopted by the SVLSS 2.0 was unable to be validated through a preliminary evaluation using EFA to explore dimensionality of the instrument's item list. Perhaps this is due to a consideration that VLS taxonomy seem to generally represent classifications of strategies that possess several overlapping concepts. For example, all items in all classification groups represent *strategic* behaviors intended to enhance *acquisition of vocabulary knowledge*. Perhaps the shades of abstraction, and lack of conceptual specificity (i.e. improving word knowledge and establishing word knowledge are different cognitive acts, but both employ systems of learning in their processing) between these VLS classifications are too niche for questionnaire psychometrics to appropriately differentiate between, resulting in scattered factor analysis results. Such issues are considered with a mind towards future instrumentation procedures for the SVLSS that must result in more nuanced data collection of learners' VLS use (see sections 6.4 and 6.5). A clear understanding of the nature of VLS classification systems is critical for interpreting findings from report I, which are subject to the lens of the SVLSS 2.0 VLS classification system.

The classification of VLS types also possesses benefits beyond that of organizing research instrumentation, data collection and analysis. It can also lead towards smoother instruction of strategy use for learning and improved reflective practices through the clarity of categorized strategies. For example, striking a definitional difference between, say, a strategy as used for establishing new vocabulary knowledge and a strategy used for improving upon that knowledge through rehearsal can contribute to better understandings of learners' own learning processes, which might contribute to them using strategies in more thoughtful, effective manners. Classification provides clearer and more accessible descriptions for what VLS are and how to use them, making VLS instruction more comprehensible and attainable for wider groups of students. This kind of strategy instruction can, in turn, expose learners to extended dimensions of vocabulary learning practices that they may not have been exposed to previously. Some learners may even use VLS in ineffective ways (Barcroft 2009), or simply because it was the only method they knew for learning. Raising the awareness of strategies that learners already use, as well as do not use, is the first step in providing explicit, purposeful VLS instruction to language learners (Chamot et al. 1999). Classification provides structure and clarity to otherwise potentially difficult to digest, or un-reflected-upon learning processes that learners may be 'blind' to until guided towards their various types, applications, and appropriate use.

As previously stated, findings regarding VLS use according to the chosen classification systems were relatively consistent between article II and report I (SVLSS 1.2 and 2.0 taxonomies, respectively), even though their taxonomy and therefore item lists shifted. This indicates that although the instrument organization and taxonomical make-up was organizationally and conceptually adjusted, it was able to detect similar patterns in the target demographic on separate occasions, perhaps suggesting that the interpretations of the underlying constructs measured by the questionnaire are at least consistent in some regards. In this sense, the target demographic may be considered to exhibit some central, persisting tendencies concerning their reported use of VLS. Further research efforts into the kinds of VLS adult, Swedish L2 learners report using through study replication and methods triangulation are needed to establish a body of evidence with which to confirm or expand upon these preliminary patterns (section 6.5 for more).

5.3 VLS Measurement: Use, Preference or Style?

Various VLS questionnaires have been used to collect information on learners' VLS use. However, there are subtle differences between what kind of information these questionnaires collect. For example, the data collected by Gu and Johnson's (1996) VLQ and Stoffer's (1995) VOLSI represent measurements of learners' reported frequency of VLS use. Schmitt's (1997) questionnaire gathered responses on how 'helpful' certain VLS are, and Fan's (2003) VLSQ measured both the frequency of learners' VLS use, and how 'helpful' individual strategies were considered to be. Another approach might examine VLS use preferences, or what VLS learners *want* to use, *wished* they used, or *feel most comfortable* using, rather than what VLS learners report actually using. Alternatively, beliefs regarding vocabulary learning (e.g. Article IV, Gu & Johnson 1996) or VLS use might be measured, which do not necessarily reflect actual VLS use, but rather reflections on VLS as part of the vocabulary acquisition process. Questionnaires might also be used to gather information regarding learning styles, or representations of learners naturally or habitually adopted or preferred ways of processing and retaining new knowledge. Learning styles are often consistent for an individual learner across several areas of study, but in SLA contexts learning styles are often described through patterns of learning strategy preference (e.g. Willing 1994) or use (e.g. Wong & Nunan 2011). Using these patterns, certain themes or profiles are used to describe collected strategy use/preference information such as 'communicative' learners who tend to favor more social and information-seeking strategies, or

'authority-oriented' learners who favor strategies that gather information and strategic approaches from instructors and native speakers.

The VLS questionnaire surveyed for this project (sections 2.2.3.2, 4.3 and article III) do not explicitly collect information on a learners' style, per se, but have been used to collect information on a range of VLS and often use that information to establish some kinds of VLS-use/preference-profiles (for more see section 2.2.1.2). Reviewing the subtle shades of VLS measurement forms, it is important to recognize that although each of the above described measurement foci represent variations on learners' relationship with strategic learning, they are measuring distinctly different constructs, and must be treated with care when developing psychometric evaluation tools, such as questionnaires.

The SVLSS used in this project has measured the extent to which learners identify with using certain strategies (section 3.3.3). This 'extent' can be further interpreted as the frequency or regularity with which learners use these strategies, and/or as a measurement of how much a learner thinks a statement matches their actual learning practices (sections 3.3.3., 4.6.1, 5.1). During the development and revision stages between the SVLSS 1.2 and 2.0, several items were reviewed that were deemed to actually represent the measurement of learning beliefs, learning styles, or VLS preferences. These items were either deleted or revised to reflect strategic behaviors that are goal-oriented, purposeful, and intended to establish or improve vocabulary knowledge (see section 3.5.2; Article II). This was done to maintain a psychometric construct structure for the SVLSS that was based firmly in the intended context – the aforementioned extent to which learners identify with using certain strategies. A Likert-scale approach was adopted to provide clear values upon which learners could classify the extent in which they use certain strategies. The intention behind gathering this type of information was to address as clearly as possible the research question, "What VLS do adult, Swedish L2 learners report using?" (RQ1), and to investigate variations across learner groups (RQ2) and to examine possible patterns extant within the target demographic (RQ3). As such, the primary quantitative data intended for collection in this project (i.e. article II, report I) has consisted of learners' responses to the extent with which they use or identify with using specific VLS, and VLS categories (section 3.3.3). Other qualitative data types were collected as a means of supporting the establishment of a preliminary VLS list (article I) and as a means of exploring learner beliefs regarding Swedish L2 vocabulary learning (article IV). These data formats were collected as recordings and interpretations of learners' observed and elicited strategic behavior representing actual VLS use as well as reflections on their use of VLS (article I), and elicited responses to questions on what is important to know a word, representing learner beliefs on the salience and value of word knowledge features (article IV).

The awareness that these various instruments collected psychometrically and conceptually diverse perspectives on learners' beliefs, actual use of VLS, and VLS preferences (i.e. section 3.3) has contributed to the way data has been treated for analysis (section 3.4), and has acted as a frame for interpretation and presentation of findings for each study. Similarly, awareness of what the collected data from SVLSS distribution actually represents is necessary to use the instrument as a diagnostic or pedagogical tool (see section 5.5.2 for more on this). Finally, as the SVLSS instrument is planned for continued development and iterative revision, there exist possibilities to make adjustments to the *kind* of data it is intended to collect. For example, investigating both frequency of VLS as well as learners' perceived usefulness of strategies (i.e. Fan's, 2003 VLSQ) could provide interesting avenues of exploration in future research endeavors. For a continued discussion of possible SVLSS adjustments and application for future research, see sections 6.4 and 65.

5.4 Individual Differences and VLS Use

Both research question two and three for this project concerned themselves with the individual differences between learners, and how they might relate to the ways that learners approach strategic vocabulary learning. The original target demographic of this project was selected following several lines of reasoning. First, adult learners (who represent a wider range of ages between 18-60) were decided upon as a nod to the importance of adult learning in SLA spheres. A wealth of data on younger L2 learners exists due to the prevalence of classroom learners available for research involvement, and a committed interest (both intrinsically and financially by researchers and institutions) in supporting learning and instruction for learners involved in public school systems. However, the plight of the adult learner, burdened with its own complex systems of cognitive, sociocultural and pedagogical issues represents a value area of investigation in itself. Especially the plight of the *beginner* adult L2 learner, who is in effect starting from square one and often perceived as having distinct learning disadvantages compared to their younger counterparts (for example, see section 2.1.4). This project initially targeted this demographic as it sought to bring attention to this field through its targeting of adult Swedish L2 learners, but found that even within these demographic restrictions, a granularity was found between 'beginners' and 'adults'.

This granularity seems best expressed through the interpretations of findings from report I. For example, within the parameters of 'adult' learners (age 18+), it was found that learners over 30 years of age use significantly

more production strategies and fewer strategies for establishing new vocabulary knowledge than do those learners between 18-21 years of age. Within the 'beginner' proficiency distinction, learners at the B1 level were seen to use significantly more productive strategies and strategies for establishing new vocabulary knowledge than those learners who identified as 'pre-A1', 'A1' and 'A2'. Relatedly, the strategy use between groups who had been studying Swedish as a L2 for under 1 month of time used significantly fewer productive and context-related strategies than those learners who had studied for more than 3 months. These findings regarding the individual difference of age, proficiency and even contact time with a TL might suggest that clumping together all possible divergences between certain demographic variables into larger monolithic groups could ignore the seemingly diverse shades of strategic learning behavior approaches that their sub-groups might contain. As such, future research regarding various stages of 'adult L2 learning' as well as granular stages of Swedish L2 learning seem warranted. Such investigations could help to better describe certain learner profiles, informing language instruction and providing research findings with valuable levels of nuance.

Findings such as these that were reached through the use of the SVLSS instrument can also be applied to pedagogical contexts such as Swedish L2 learning and teaching. Knowledge and awareness of learners' individual differences regarding demographic variables (e.g. education background, language proficiency, etc.) as well as learners' beliefs, learning styles, and strategic approaches to learning vocabulary can all be used to inform L2 language instruction and to support reflective teaching practices. For example, knowledge that an individual learner, or group of learners, report over-valuing 'can do' abilities related to vocabulary knowledge, automaticity in production, word spelling, pronunciation, and meaning according to register and use (i.e. article IV) can be used to re-focus instruction either to attend to learners' expectations for salient learning, or to fill in gaps with vocabulary knowledge features that may not occur to them as so immediately relevant for 'knowing a word' (e.g. collocations). Similar examples could be built regarding reported VLS use according to the categories of VLS measured by the SVLSS. Further suggestions for how to apply this kind of data to pedagogical contexts can be seen in the following section (5.5).

5.5 Suggested Use for the SVLSS

The SVLSS instrument was developed as a research tool intended to measure the extent in which learners report using VLS for Swedish L2 vocabulary

learning. The instrument was designed for use with adult, lower-mid to high proficiency English language users in its current state (version 2.0), and is recommended for use with this specific target demographic.

The Likert-scale measurements used by the SVLSS represent 'how true of me' certain statements are for learners' during their vocabulary learning experiences. Those statements represent conceptually distinct strategic behaviors that learners do to learn Swedish L2 vocabulary, but are also grouped together into classifying categories regarding what kind of strategy they represent. High scores on items reflect that learners consider a strategy as something they use commonly for learning, and are likely to have encountered before in instruction or learning. Low scores on items reflect that learners likely do not perform a given strategy for vocabulary learning, except perhaps in very specific contexts. A low score may or may not indicate previous exposure of knowledge of how to perform a given strategy. Expanded considerations regarding interpretation and application of collected SVLSS data can be found later in this section.

The SVLSS was constructed and organized through a process that involves a specific VLS taxonomy that classifies the kinds of VLS represented by the instrument. Using this classification system as a guide, it is possible to investigate the range of VLS used by groups of students both on an individual strategy level, as well as on the VLS categories that they report using. Research applications for the SVLSS therefore support investigations into, for example, the extent in which certain instruction practices affect VLS use through using the SVLSS to facilitate pre- and post-test measurements. Alternatively, it might be used longitudinally to track VLS use across individual or group Swedish L2 learning experiences over time, explore possible variations in VLS use across different groups of learners (e.g. learning abroad vs. learning in Sweden; English L1 learners vs. Arabic L1 learners), or as a tool with which to round out qualitative descriptions of learner communities through establishing their strategic vocabulary learning practices (see section 6.5 for more on potential research applications for the SVLSS).

From the perspective of the language instructor, the SVLSS can also be used as a useful diagnostic tool for teachers and learners. As the underlying VLS taxonomy for the SVLSS instrument is considered to be both context-embedded and representative of a wide range of VLS types (see sections 5.1, 5.2), it can be used to determine strengths, weaknesses, and gaps within a learners' VLS repertoire. A language instructor with students who struggle with Swedish L2 vocabulary learning can quickly and easily administer the SVLSS to individuals or groups of students, diagnosing their range and/or frequency of VLS use, and most likely raising a discussion regarding students' past exposure to VLS, how they view VLS, and whether or not they think they use them effectively, or at

all. As Gu (2018) plainly puts it, "The least a questionnaire can do is to raise the awareness of students about their vocabulary learning behaviors so that they can become more reflective about their own learning" (p. 343).

Furthermore, the SVLSS can also be used to acquire information on learners' VLS use at the start of a Swedish L2 course in order to help inform a teacher's approaches to vocabulary teaching. This may come in the form of adding VLS instruction to the curriculum, and in informing more effectively organization VLS instruction (e.g. what individual VLS or VLS categories to focus on) according to learners' previous exposure and needs. In connection to a program that explicitly instructs learners on what VLS are, how they should be used and how to reflect on their use (e.g. Chamot et al. 1999; Hajer et al. 1996), learners can benefit from increased awareness of strategy use, greater vocabulary learning achievement, and higher motivation for learning (Mizumoto & Takeuchi 2008).

5.5.1 Administration and Scoring

The SVLSS is freely available to researchers and instructors in both online and print formats (please refer to appendix section 9.8 for the print format, and http://www.tinyurl.com/SVLSS for an online version) Distribution for either research or pedagogical purposes should be accompanied with the accompanying explanation of what the SVLSS is and how the instrument works (see appendix 9.6). The appended demographic survey can be optionally included, amended, or separated from the SVLSS following the needs of the researcher or instructor.

In order to make use of the data collected by distributing the SVLSS some simple scoring procedures can be undertaken. To begin, the average item score (mean) for each VLS item should be obtained. This is accomplished by adding up all items in a group (e.g. the entire survey; rehearsal strategies) and dividing the sum by the total number of items. This will provide the instructor with a mean score (out of 5) that can be used as a quick reference as to how wide or narrow a learner's VLS repertoire is according to the SVLSS VLS classifications, and to what extent those learners use those VLS.

As the SVLSS uses a 5-point Likert-scale for measurement, an 'average' mean score between 2.5-3.5 in a given VLS class would suggest moderate use across all examples of that class provided. A score between 3.5-5.0 would indicate high use across all examples of the given VLS class, and a score between 1.0-2.5 would indicate low use. Instances of high or low usage of specific VLS types could point toward either potential reliance on certain strategies or kinds of strategies, gaps in VLS exposure or use, or might suggest a learning style that

is inclusive of some VLS but excluding of others. Further conceptual considerations regarding the interpretation of collected SVLSS data can be found in the section below.

5.5.2 Interpretation and Application

An essential assumption regarding VLS knowledge and use by language learners is that previous exposure to VLS variants is (in many ways) a prerequisite for these strategies to be a part of a learners' strategic toolbox, and therefore to be accessible for use. In other words, without knowledge of the existence of a strategy the odds of a learner using that strategy are quite low. That said, responses to the SVLSS instrument should be interpreted according to some assumptions. First, if a learner responds positively to an item (i.e. 'Very true of me'), it indicates that a learner has probably had prior exposure to a specific VLS, and second, identifies personally with previous experience in the use of that VLS. Conversely, if a learner responds negatively to an item (i.e. 'Very untrue of me'), it might suggest one of *two* possibilities. Either a learner has no knowledge of that strategy and therefore does not employ it's use in vocabulary learning *or* the learner does have knowledge of that strategy, but prefers not to use it for whatever reason. As such, positive responses to VLS use indicate previous knowledge *and* use of a strategy whereas negative responses *may or may not* indicate previous knowledge, but certainly indicate non-use of a strategy.

These crucial assumptions have consequences for interpretation and analysis of data collected by the SVLSS, both for research purposes, as well as for application by language teaching practitioners. When reviewing large quantities of data regarding learners' reported VLS use, overall positive-leaning results for learner groups (e.g. by age, proficiency, etc.) or for a whole sample not only indicate that these learners *use* a greater number of strategies, but that these learners are considerably well-versed in strategy use either through previous instruction of VLS use, or through the development of autonomous strategy use throughout previous learning situations. Negative-leaning results, however, are somewhat murkier with regards to how exactly the should be interpreted. A negative result should indicate that learners do not use a certain strategy, however, learners may or may not have been exposed to strategies through instruction or other means, and thus may or may not actually have previous knowledge of low-scoring strategies. Such findings in research would justify investigative follow-up with learners (e.g. exit interviewing) to more accurately understand the nature of their responses.

From a pedagogic-diagnostic perspective, negative results would justify further follow-up with learners on individual- or group-based levels to explore

whether VLS use results are the consequence of strategy *preference* or lack of *strategic knowledge*. Both sides of the coin are relevant for practitioners and learners with regards to reflective learning. Knowledge of learners' strategy use preferences (or learning styles) provides the instructor with information with which to support differentiated instruction, and provides the learner with a better meta-knowledge regarding their own learning processes. An understanding of learners' lack (or possession) of VLS knowledge provides the instructor with information that can help to formulate the focus of explicit strategy instruction (Rubin et. al. 2007). A focused plan of action for VLS instruction can facilitate the development of a wide and varied strategic toolbox which learners can apply to their individual learning contexts and goals. VLS knowledge, in this sense, can be explored both on an individual strategy level, or on the level of the various classes of VLS that exist in related taxonomy.

Finally, the SVLSS can be used as a tool with which to facilitate the entrance of informed VLS instruction into the classroom in order to provide learners greater strategic toolbelts, and to foster greater autonomy in vocabulary learning. As discussed in sections 2.2.2.2.7 and 2.2.3.3.6, explicit VLS instruction can provide learners with increased learning motivation, support more frequent and varied strategy use, and improve overall vocabulary learning achievement. Distribution of the SVLSS can support VLS instruction models that begin with raising awareness of the strategies that learners already use (e.g. Chamot et al. 1999), and could be used longitudinally to explore VLS use development for learners enrolled in a VLS instruction-enriched curriculum.

6. Limitations and Next Steps

This chapter begins with a discussion of limitations related to this research project with regards to VLS conceptualization and their classification systems, potential issues with instruments and instrumentation processes, and how the participant sample may have affected data collection and findings. Following accounts of these limiting factors and as a means of using them as a motivation for forward progress, the perspective of this section shifts into potential future research to be done regarding strategic Swedish L2 vocabulary learning, and lays out plans for next steps that must be taken for the continued development of the SVLSS instrument.

6.1 Participant Sampling

Some complicating issues were identified with regards to the selected demographic. It was the original intent of this study to restrict data collection from learners to learners over the age of 18 and who identified themselves as possessing B1 Swedish proficiency and below. The reasoning for this was to exclude younger learners from the participant sample in order to focus on the learning situation of adult language learners (section 2.1.4), and to focus on beginner learners of Swedish L2 in order to establish a baseline for the kinds of strategic vocabulary learning approaches this under-explored demographic uses. Doing so was intended to support future research in this field, and to establish a tool suited for pedagogical application to this specific demographic. This was considered to be enough restriction at the time of project initiation.

Other demographic variables (e.g. L1, degree of multilingualism, education background) were left unrestricted in order to explore possible sources or correlates to variation in VLS use, and to be able to best represent the sample demographic. Further restrictions on the target demographic were discarded owing to the thought that too much focus on specific demographics would narrow the possible pool of participants. However, for example, collecting data from a participant pool reporting the use of a specific (or some specific) L1(s) may have provided cleaner data than the great diversity of L1s present in the final collected data pools. This, of course, would have resulted in a very different study that sought to characterize an entirely different demographic.

The work performed regarding Swedish L2 learners' VLS use in this study set out to approach participants, instrumentation, data collection and analysis from a context-aware perspective akin to Gu's (2013) acknowledgement of person, task and context as necessarily relevant dimensions with which to view VLS use (see section 2.2.3). The approaches to data collection and interpretation used at the start of the project (article I) reflected these considerations at the outset, using a combination of elicited and observed methodological tactics to collect data. However, this ideal may have fallen somewhat short as the project veered into a stronger emphasis on instrumentation (article II), and VLS theory (article III). Efforts were made to bolster the prominence of the context-driven perspective based on learners' individual differences and beliefs related to vocabulary acquisition (article IV), but the characterization of the target demographic and learner groups within the demographic through analysis based solely on self-report VLS use data and demographic variables may have done the context-driven perspective a disservice. Possible solutions to this problem could have triangulated the findings from questionnaire data with qualitative data collected from the same participant sample in order to integrate and represent more contextual factors. For example, exit-interviews with participants after taking the SVLSS could have provided extended insights into the responses that they provided with regards to reasoning for use or non-use of VLS, or what contextual factors might be influential to their preference and use of VLS. Also, information could have been collected on learners regarding their learning style preferences (section 2.2.1.2), which may have further informed investigations into their VLS use.

In order to value the significance of person, task and context connected to VLS use, future work must seek to triangulate findings garnered from questionnaire-style instruments like the SVLSS (e.g. article II, report I). Triangulated research could explore learners' individual differences in greater depth, such as motivations for learning Swedish L2 vocabulary and detailing backgrounds in VLS instruction, experiences and use by learners. Qualitative investigations should support quantitative results in the pursuit of better

illustrating learners as more holistically represented socio-cultural, cognition-based individuals who use learning approaches in concrete situations for specific reasons. These kinds of findings can be used readily to inform researchers, learners and teachers on the situational needs and expectations of learners, and to back up that information with related explanations of why and how such behavior might be found. Considerations related to difficulties regarding instrumentation for this kind of research are discussed in section 6.2, and proposals for how it might be facilitated can be found in sections 6.4 and 6.5.

6.2 Instruments

The first set of instruments used in this project consisted of a planned semi-structured interview coupled with a vocabulary learning task that included think-aloud protocol. There could ostensibly exist some now clear issues with the early data collection performed for this project using those instruments.

The learning task, though intended to provide an opportunity to observe a wide ranges of participants' strategic approaches to learning Swedish vocabulary in an on-line context, suffered from design missteps related to reliability standards. The task asked participants to 'learn' 20 Swedish words, while providing a range of word knowledge features that participants could choose from to learn. Participants were asked to 'learn the words in whatever way they would study them on their own', and indeed displayed a wide range of VLS in order to learn word knowledge.

However, the 'evaluation' stage was presented in such a way that all participants interpreted as them only needing to provide the English translation equivalent of each word. This has very likely produced a filtering effect on VLS used for word knowledge recall, only using those strategies that would entail the recall of word meaning (and maybe written form), not having incentive to learn or recall any other word knowledge features (e.g. use, spoken form, etc.). As such, VLS chosen and used during these data collection events may have leaned towards more shallow rehearsal and associative strategies rather than being representative of a learners' full repertoire of VLS. Furthermore, the nature of the task was a short-term vocabulary learning experience and did not allow for an opportunity to observe learners' long-term VLS use. This issue was thought to be resolved through extended lines of questioning on VLS use during the rest of the semi-structured interview that would 'round out' the investigation of learners' full VLS repertoires since these discussions were not fully tied to the immediate learning task. However, the possible filtering effect

was not *directly* addressed, which may have, again, influenced the collected VLS use data sets for article I.

This project also utilized questionnaire Likert-scale item statements as a primary means of collecting data on learners' VLS use. This data collection method, though convenient for gathering large amounts of data, is reliant on the *self-report* of learners' VLS use. As previously mentioned (section 3.3.3), self-report data is a subjective response from participants, rather than objectively observed and reported on by an outside party (e.g. classroom observation). Self-report responses may involve shades of learners' interpretations of their 'actual strategy use', but may not accurately reflect an objective account of how learners approach strategic vocabulary learning. For example, a learner may respond to questionnaire items as their 'imagined best self', or as using strategies that they *wish* they used, rather than those they *actually* use. They might also over- or under-estimate their VLS use due to a lack of exact memory or due to emotional biases that influence their self-reflection of actual learning practices. As such, responses collected using the SVLSS instrument must be treated less as exact value-based measurements, and more as indicators that point towards trends in their approaches to strategic learning.

Furthermore, the Likert-scale measurements used to represent learners' VLS use (i.e. 'Very untrue of me, untrue of me, etc.) are built on ordinal rankings expressing ranks of representativeness regarding VLS items. These rankings are somewhat abstract without a defined, value-based distance between each possible response. We cannot accurately measure and confirm an equal distance between 'Very untrue of me', and 'Untrue of me', or confirm that they are as equally distant between 'True of me' and 'Untrue of me'. As such, these response prompts are subject to individual respondents' interpretations of the ranked responses and their intrinsic value or meaning, and the relatively 'open' nature of ordinal ranking. These issues in subjectivity are generally par for the course in many psychometric questionnaire designs, but it remains important to note as ordinal data operates differently than nominal or ratio data sets, for example.

The ordinal nature of Likert-scale response used in this questionnaire was addressed through detailed explanations to participants, before distribution, regarding what the SVLSS instrument measures, and how to fill it out as accurately as possible (appendix sections 9.4, 9.5, 96., 9.8, 9.9, SVLSS website[16]). Also, treatment of data sets with regards to data cleaning (e.g. removal of Norwegian/Danish L1 users) was performed to ensure as much adherence to collecting the intended data as possible, and all analyses were selected for use according to compatibility with ordinal-style data sets.

16 The SVLSS version 2.0 can be viewed online at http://www.tinyurl.com/SVLSS

Some important reflections deserve to be stated when viewing the instrumentation processes used in this research project from a somewhat more macro-level perspective. The heavy focus on instrumentation for the SVLSS questionnaire had an undeniable effect on the direction of this project, and ultimately has affected the collected findings and interpretations made therein. On one hand, the focus on building an instrument from the ground-up was adopted in order to best ensure its relevance to the target demographic and to support reliable representation of the intended constructs to be measured. On the other hand, the instrumentation process used to develop such an instrument could have been forgone in favor of simply selecting an instrument that was not created for the specific intended contexts, stating the limitations of doing so (i.e. sections 3.3, 5.1), and forging ahead with data collection in successive, iterative events that ostensibly could have be used reflectively to make context-specific adjustments to the selected instrument along the way. This may have resulted in a more 'findings rich' than 'methodologically critical' project overall.

However, this perhaps only represents another version of how this project may have proceeded having taken different approaches to the problems being addressed at the start, and would have resulted in a completely different study in itself. As it stands, the methodological processes taken up, and the subsequent findings and implications expressed here represent valuable reflections and observations on the methods available to research. Also, transparent reporting on these methods has shown how the decisions made regarding instrumentation are critical to understanding and interpreting data collected for research purposes.

6.3 The Nature of VLS

LLS and VLS are defined as "consciously-chosen and enacted" actions that are used to accomplish some kind of a learning goal (Oxford 2017). Individual strategies are embedded in contextual experiences that include the individual using the strategy, the purpose or aim for using the strategy, and the environment in which it is being used (Gu 2013). As such, by definition, the SVLSS questionnaire asks learners to report on the extent with which they 'consciously' chose and use VLS to enhance their language learning. However, the statements that VLS are described in on the SVLSS are isolated descriptions of strategic learning approaches that are not embedded in any kind of task-based or context-based event. In this way, a kind of 'context-report gap' exists here between the actual nature of VLS as enacted, context-embedded processes, and

reporting on their use as more or less detached from their contextual qualifiers. For example, a learner might employ a rehearsal strategy of quizzing themselves on a list of words to help remember their L1 translations of those words. This strategy as it stands, however, is currently devoid of contextual information regarding the task at hand (how many words? for what reason do they need to be learned?), the learning situation (is there a time pressure for learning these words? are they needed to pass a class? For self-motivated reasons?), and the learner themselves (have they used this strategy before? Do they know if it is helpful already? Are they experienced language learners?). All of this contextual information is requisite in choosing, performing, and evaluating the success of strategic learning (Gu 2013; Oxford 2017).

Yet, the lack of external contextual information in a questionnaire item does not necessarily predicate that questionnaire items regarding VLS use are received by learners as 'context isolated events'. Learners are likely to relate VLS items to their actual learning processes which are naturally context-embedded. However, the 'context-isolated' fashion in which VLS items are presented in can potentially contribute to misrepresentation of items that were intended to represent a certain or single strategy. They might be interpreted in a variety of ways dependent upon the individual differences and experiences of the learner reading the statement (e.g. see issues with SVLSS 1.2 in section 3.5.2.3).

Parallel to this issue, LLS or VLS are often not used in isolation by learners to accomplish a task, rather, several kinds of strategies are often used in tandem, or in clusters, to enhance learning and accomplish a certain language learning goal (Macaro 2007; Wang 2015). For a rather common example, in order to learn a list of words for an upcoming vocabulary exam, a learner might write down words in a list (VLS 1) while reading them aloud (VLS 2) and quizzing themselves on translations of the words in their L1 (VLS 3), and rewarding themselves when they get them all right (VLS 4). Such overlap has been a source of criticism for the classification systems utilized for LLS and VLS. Oxford's (1990) original six-category LLS taxonomy (memory, cognitive, social, compensation, affective, and meta-cognitive strategies) was criticized by Tseng et al. (2006) for classifying strategic behaviors while each strategy as described in an isolated fashion could ostensibly belong to one of several strategy classes depending on the context that a strategy is used in. For another example, the strategy "asking the teacher what a word means" might be interpreted as a social strategy if the learner wishes to practice word meaning communicatively, a compensation strategy if they are merely asking the teacher to express word meaning to get through a sentence, or cognitive if they wish to learn the word through associating it to the teacher explanation of the word. Recent work by Cohen and Wang (2018) suggests that strategy classifications are useful for describing the various approaches used by learners to learn stra-

tegically, but that the nature of a strategy can shift subtly or dramatically dependent on the individual using it, the task it is used for, and the context it is used in. As such, classification systems are useful for research and pedagogical application, but on a conceptual level may represent an over-simplification of what is actually happening when we 'learn strategically'.

Although these issues raise some serious questions concerning the reliability of VLS items populating SVLSS (and other VLS questionnaire) item pools, as well as overall validity of such instruments, there does not seem to be a ready alternative solution that would better facilitate mass collection and analysis of VLS use data. As it stands, the SVLSS instrument presents each VLS item as representative of a larger category (e.g. strategies for establishing new word knowledge), sometimes a sub-category (e.g. through contextual information), and are expressed through a unique strategic approach (e.g. I check my guessed meaning of a word against the context I find it in to see if it fits). This representation does not necessarily preclude the possibility of conceptual overlapping in VLS, nor that they might occur in clusters – it simply does not account for conceptual bleeding or clustering in a context-embedded basis, and therefore cannot offer accurate or appropriate accounts of learners' clustering of VLS or of VLS concept shifts according to context. As the instrument stands, and as previously mentioned (section 6.2), learners likely project their previous VLS use context memories and experiences onto SVLSS items when responding, mapping meaning and context onto the items that is unavailable to the distributor of the SVLSS in its current form. Future iterations of instruments intending to gather information on learners' VLS use would benefit from measures that also account for learners' individual differences, the task at hand when using VLS, and the learning context that VLS use happens in.

One possible approach that may work toward alleviating this 'context-report gap' would be the use of context-embedded narrative questionnaire item statements on VLS questionnaires. Such statements would contextualize VLS use according to pre-determined situations that could be adjusted according to the purpose for using the questionnaire (i.e. research, diagnostic), the audience (i.e. learner group proficiency, educational background), or the types of VLS being taught or focused on by practitioners or researchers (i.e. VLS for establishing new word knowledge). A plan for adapting the SVLSS following this form of questionnaire design will be detailed in section 6.4 regarding the SVLSS 3.0.

6.4 SVLSS 3.0 Design and Instrumentation

In 'real-life' application, strategies are goal-oriented, purposeful and deliberately chosen by the learners using them to accomplish language learning tasks (Griffiths, 2013; Oxford 2017), and therefore are bound to the contextual factors in which they are chosen and performed within. Strategies also do not often occur as single acts during learning, but rather are used in clusters to achieve learning objectives (Macaro 2007; Wang 2015). In this sense, questionnaire use has been criticized as not possessing the scope with which to collect data on contextual factors affecting LLS and VLS use (see sections 6.2 and 6.3) thus misrepresenting strategies as isolated from context, person, task, and not accounting for strategy clustering during learning. This results in an instrument that provides a considerably opaque and partial representation strategy use reported by L2 vocabulary learners.

That said, a paradigm for questionnaire design is offered here that seeks to address the shortcomings inherent in Likert-scale questionnaire use in the field of L2 vocabulary strategy use. Possible adjustments or construction designs for the SVLSS 3.0 are outlined in two core models. The first involves a questionnaire that continues with presenting VLS in the fashion of previous instrument builds but with the addition of required supplemental information response fields regarding contextual factors connected to learners' reported VLS use. The second outlines a questionnaire that would provide learners with *learning situations* (i.e. vocabulary learning task, goal, context) instead of VLS statements, and allow learners to provide accounts of the strategies that they would use (or have used) in each specific context. It must be noted first, however that at the core of each possible build for the SVLSS 3.0, the underlying VLS taxonomy developed for the SVLSS 2.0 would be retained. Although validity results obtained from CFA in report I were largely inconclusive regarding the hypothesized content validity of the SVLSS 2.0 item pool (section 3.5.2.4.2), the theory behind the ordering of VLS in the chosen taxonomy (article III) is considerably sound, and further exploration of its use in instruments designed for collecting VLS use data in the Swedish L2 learning context is warranted. The demographic survey that precedes the sections regarding VLS use would also be retained for all possible SVLSS 3.0 builds in order to collect information on learners' individual differences and their connection to learners' VLS use.

In SVLSS 3.0 build one, the basic concept would retain most of the design from the SVLSS 2.0. Item statements representing VLS concepts (after some simple revisions regarding clarity and readability) would be retained, as would the Likert-scale measurement style. This build would propose the addition of two supplemental multiple-choice fields appended onto each item: (i) What is

the Swedish L2 learning context the use of this VLS occurs in? (ii) What kind of vocabulary learning task do you most commonly use this VLS to accomplish?

Supplemental question one multiple choice fields would include relevant learning contexts to Swedish L2 learners that could be pre-determined or pre-set before distribution to a specific target demographic, or based on research objectives motivating SVLSS 3.0 distribution. For example, the fields might offer such choices as 'home study', 'classroom study', 'casual language use', or 'describe the context here _____'.

Supplemental question two fields could be populated with more macro-learning statements such as 'homework', 'preparing for a quiz', or 'meeting my goals', or fields could cover more micro-learning tasks such as, 'to learn the meanings of a word list provided by the teacher', 'to understand a passage in a book I am reading', which would likely necessitate fill-in answers. Responses to the 'learning context' and 'vocabulary learning task' connected to the extent with which learners use VLS (Likert-scale response) would be trained in defining 'learning contexts' and 'vocabulary learning tasks' and what kinds of responses are appropriate or not (as connected to intended data collection practices) prior to filling out the SVLSS 3.0.

Item Statement	I write words over and over to remember them.
Response	Very true of me 5 4 3 2 1 Very Untrue of me (Circle one)
Supplement 1	Learning Context:
Response	1. Home Study 2. Classroom Study 3. Casual Language Use 4. Other: _____
Supplement 2	Vocabulary Learning Task:
Response	1. Homework 2. Preparing for word quiz 3. Weekly words learned goal 4. Other_____

Figure 10: *SVLSS 3.0 Concept One Example.*

In SVLSS 3.0 build two, the SVLSS 2.0 VLS item list would be retained, but relegated to a categorized list, ordered using the SVLSS 2.0 VLS taxonomy. This list would accompany the SVLSS 3.0 which would instead provide narrative statements describing specific learning contexts and vocabulary learning tasks (see figure 11 below for an example). The contexts and tasks embedded in the narrative statements would be pre-determined and pre-set by the questionnaire

distributors according to whatever context(s) and task(s) are relevant to the pedagogical or research purposes motivating the collection of VLS use data. Learners would be able to use an accompanying VLS list to mark down which VLS (as many as they would like) they commonly use during the learning situations expressed by the narrative statements.

This form of questionnaire would require explicit training prior to distribution that would explain what VLS are, how to think about learning contexts and learning tasks, and that they are able to (and encouraged to) respond with multiple VLS to narrative statements if each strategy comprises part of a learners' strategic learning approach to a specific learning situation. The SVLSS 3.0 build two would not inherently account for the frequency with which VLS are performed, instead focusing on which VLS learners report using to accomplishing the task in a given learning context as described in the narrative statements. Further adjustments could perhaps account for this shortcoming and provide more granular information to stakeholders distributing the questionnaire through, for example, the provision of a ranking system for 'most to least commonly used' VLS listed in response to a narrative statement (e.g. Schmitt 1997), or ranking VLS as 'most to least helpful' in accomplishing a certain learning task. This would provide ordinal data that could be used to extend VLS use data beyond common frequency of use data collected by Likert-scale measurements, and potentially facilitate cluster correlations between VLS use (via whatever metric(s)) and detailed contextual data.

Both possible rec-onceptualizations of the SVLSS would provide new avenues for collecting VLS use data while accounting for context-inclusive interpretations of findings. Furthermore, the additional information that would link VLS use to vocabulary learning tasks would facilitate exploration of VLS clustering to accomplish certain learning tasks (within their related learning contexts). Generally, such granular information is only available to researchers on a qualitative case study level. However, as this information is being collected through a questionnaire instrument that can be mass distributed with appropriate distribution and participant training, such data could be quickly available for either diagnostic or research purposes to investigate VLS use on both individual or group levels. Also, adjustments could be made to the underlying psychometric measurement performed by the SVLSS with regards to what kind of concept the Likert-scale intends to collect. For example, simple adjustments to the scale response used in build one can be made to explore learners' 'frequency' of VLS use, or the 'perceived usefulness' of VLS for certain learning situations (e.g. Fan 2003).

Item Statement	I am learning Swedish in a Swedish language class that I attend twice a week. I just started learning Swedish. I have a goal of learning 20 new Swedish words from a big list that we have a quiz on in one week. What strategies do you use to accomplish this task?
Response	Please write the number (e.g. VLS #21) of as many strategies that apply from the attached VLS list: _____ _____ _____ _____
Supplement 1	VLS Usefulness:
Response	Please mark your VLS responses above with how useful you find them. '5' is very useful '4' is useful '3' is somewhat useful '2' is not so useful '1' is not useful at all.
Supplement 2	Most Used VLS:
Response	Please mark your VLS responses above with which you use most to least to accomplish the task stated. '5' is always for this task '4' is usually for this task '3' is sometimes for this task '2' is not usually for this task '1' is never for this task
Note: The underlined fields in 'Item Statement' can be altered prior to distribution in order to suit the target demographic.	

Figure 11: *SVLSS 3.0 Concept Two Example*

Finally, following piloting and evaluations of validity, reliability, and readability of new SVLSS 3.0 constructions, production of the SVLSS in L2-accessible English and L2-accessible Swedish would be prioritized in order to expand distribution to other target demographics (e.g. higher proficiency Swedish L2 learners). This would be done first to test the instrument in other demographics than adult, beginner Swedish L2 learners, and second to extend the practical application of the SVLSS to a variety of contexts. Such extension would facilitate comparisons of its use for data collection across various contexts that could be used to determine appropriateness of distribution to new target demographics (e.g. advanced proficiency Swedish L2 learners), and perhaps indicate points of revision that would adjust the instrument for specific audiences.

Information collected by the SVLSS 3.0, once arranged in a database, could be used in a variety of valuable ways to explore relationships between learners'

reported VLS use, their individual differences, and the contexts in which they use VLS. Possible projects that might use the SVLSS 3.0 to accomplish research goals are outlined in section 6.5.

6.5 Future and Planned Research

Planned revisions and updates to future iterations of the SVLSS (see section 6.4) are motivated by the importance of including measures that attend to person, context and learning task (Gu 2013) as connected to learners' VLS use. As such, much of future planned research is situated within paradigms that take these critical factors related to interpreting learners' VLS use into account. For example, future use of the SVLSS instrument might investigate VLS from the perspective of specific classifications (e.g. strategies for establishing new word knowledge), and exploring connected data related to context, task and person in order to determine which kinds of strategies are most (or least) used in certain tasks or contexts. Further, following the kind of work offered by Gu & Johnson (1996) and Fan (2003), the relationship between VLS use (supplemented by person, context and task data) and vocabulary acquisition achievement (e.g. class grades, standardized exams, vocabulary size) can be investigated through the distribution of the SVLSS. This work could be performed diagnostically to examine individual or group trends in VLS use for specific tasks, or performed longitudinally to explore potential correlates between VLS use (in certain contexts) and vocabulary learning achievement.

Alternatively, another possible avenue of research might further investigate the nature of certain types of VLS themselves according to context, task and the individual: Why do learners use specific strategy types for certain kinds of learning situations and not others? Why do learners choose to rely more on certain types of strategies instead of others? To what extent does this rely on the task a hand? The specific learning context? The linguistic, social, educational, or cultural background of the learner? This line of research would surely utilize mixed methods and triangulated approaches to data collection and interpretation in order to synthesize findings across demographic and socio-cultural factors, VLS use data, and supporting context/task information.

Another critical research topic stems from the perspective of VLS instruction and how it affects VLS use, and perhaps more importantly, vocabulary learning itself: Are certain variations of VLS instruction delivered to Swedish L2 learners more or less effective than others? Does VLS instruction in the Swedish L2 learning context provide benefits for those learners such as those seen in other learning contexts (e.g. Mizumoto & Takeuchi 2008)? Such

research could easily make use of the SVLSS instrument to collect VLS use data and connect it to various versions of VLS instruction implementation and learning achievement measures using between-subjects experimental design methods.

The above suggested research paths can also be applied to a variety of specific learning contexts within Swedish L2 learning. For example, the SVLSS can be readily distributed to SFI or SAS programs in universities or institutions of continuing education for research purposes, or as a diagnostic or reflective tool for instructors (see section 5.5).

As a final note, some supplemental data sets collected during this research project were not fully prepared for analysis due to project restrictions regarding scope or resources, and have been earmarked as planned research to be performed.

Open-ended question response data collected regarding learners' motivations for learning Swedish L2 learning will be organized and subject to content analysis in order to explore what drives learners' vocabulary learning, as well as to examine possible relationships between learners' motivations for learning and their VLS use.

Also, text data collected through another open-ended question response asking, 'how do you decide which words you study?' will be used to expand understandings of learners' vocabulary acquisition with regards to establishing new vocabulary knowledge. This data set will be organized using content analysis procedures and also used to explore potential connections to learners' VLS use, specifically to strategies used to establish new vocabulary knowledge (using content & sources), a VLS category that saw significant differences between groups of learners in this project (sections 4.5 and 4.6.3).

Further rounds of data collection using the SVLSS 2.0 are also planned in order to perform further evaluations of reliability and validity for its item pool and underlying VLS taxonomy, and to guide updates to the instrument. This is to establish a stronger representation of the constructs intended for measurement, and to maintain a 'living instrument' that is subject to persistent refinement across contexts of use.

7. Concluding Remarks

This research project was designed and performed with the central assumption that learners benefit from the use of VLS for vocabulary acquisition, and that learning strategies themselves represent a critical component of the language learning process. An apparent lack of explicit research concerning adult, beginner level Swedish L2 learners' use of VLS and the absence of an instrument suited for this context and target demographic motivated the development and creation of a data collection instrument built from the ground-up. This instrument, the SVLSS, was developed with the intent of representing relevant VLS use by the target demographic, and data collected from them would establish a preliminary illustration of how these learners approach learning L2 Swedish vocabulary.

A series of five studies were performed that attended to the objectives set by a series of connected and successive project aims. From article I, interviews and learning tasks were used to gather elicited and observed data on learners' VLS use to establish a preliminary VLS list that would be used to populate the first SVLSS (1.0) item pool. After piloting, data was collected using the SVLSS 1.2 in article II and used to evaluate the instrument in a transparent fashion in terms of accessibility, and item list reliability and validity. This evaluation resulted in the interpretation of a preliminary six-category VLS taxonomy considered to be relevant to the target demographic. Revisions were made to the instrument using these evaluations, and a comparative review of other VLS questionnaires was performed to situate the SVLSS item pool and taxonomy (article III), resulting in the SVLSS 2.0. This new iteration adopted a four-category VLS taxonomy, and was used to collect VLS use data from the target demographic in order to explore possible patterns of VLS use across the whole sample, and across groups of learners. Meanwhile, a qualitative inquiry into

Swedish L2 learners' beliefs of what is needed to 'know a word' (article IV) provided extended understanding of the individual differences possessed by the target demographic, contributing to a more holistic conceptualization of them as VLS users and language learners.

Surveying aggregate findings from the studies presented in this project, the target demographic seems to indicate using strategies for establishing new word information more than any other category of VLS. What's more, strategies for improving on acquired vocabulary knowledge (rehearsal and encoding) were the least reported, alongside specific VLS that were considerably 'niche', and therefore likely to be less accessible to a general population of learners. This could suggest that the target demographic for this project strongly represents learners who need to acquire a significant amount of new L2 vocabulary knowledge and input to facilitate effective Swedish L2 learning during their 'beginner' stages of language learning. Further, when reporting on what word knowledge features are most important to 'know' words, abilities based in 'can do' statements (e.g. automaticity, successful communication) were amongst the most salient after spelling, pronunciation and meaning. This information suggests that not only do these learners focus heavily on learning new word knowledge at beginner proficiencies, but that they do so to facilitate communicative use of that knowledge which is linked to what they believe to be knowledgeable language learning.

Such findings might be connected to learners' individual differences as well. Findings from report I suggest that older adult learners with beginner Swedish proficiency use more productive activation strategies than younger learners with even lower proficiencies. Also, younger learners with beginner proficiency use more strategies for establishing new vocabulary than do older learners at even lower proficiencies. These granular findings suggest that different VLS use patterns can be observed even at discerning levels of 'beginner' proficiency, adult age groups, and early language contact. And what's more, these patterns go towards further clarifying that a desire for communicative practice (through productive strategies) in vocabulary learning may not be immediate for the beginner learner, but comes quickly after an initial learning period that is heavily informed by a need for acquiring as much new word knowledge as possible.

The SVLSS instrument can be used in its current form (2.0) by researchers to explore VLS use patterns in certain groups of learners, or by instructors for diagnostic or VLS instruction purposes. However, the use of past classification systems and questionnaire use connected to the study of VLS in SLA contexts has seen criticism. As a response, the instrumentation processes reported on in this project as well as the resulting taxonomical representations of VLS categories adopted have been presented with as much transparency and accessibility as possible. It is hoped that in this way, findings collected from instru-

ments used can be interpreted with as much clarity as possible after seeing where the data collection methods have come from, and what the intentions are behind their design and development. Also, the VLS classification systems adopted by the SVLSS have been described as fully as possible throughout its iterative and revisionary processes, also in the hopes of providing clarity with regards to how data is organized and interpreted in analysis.

One major issue that remains in the current construction of the SVLSS instrument is the absence of measures that account for collection of data regarding the learning context and vocabulary learning tasks related to a learners' VLS use. In order to properly represent learners' VLS use in a more holistic and context-embedded fashion, updates to the SVLSS instrument have been proposed that either augment SVLSS items with fields to include context and task information, or to refocus the instrument using narrative statements which embed items in context and task, asking learners to respond with representations of the VLS they use in such situations. Future research efforts must focus not only on learners' VLS use, but on VLS instruction in Swedish L2 contexts, and on collected data that must also account for learners' individual differences, learning contexts, and the vocabulary learning tasks connected to VLS use. In order to facilitate future research efforts in these fields, the SVLSS must be met with continued and persistent revision and refinement in order to maintain its use as a progressive data collection instrument in the fields of SLA and VLS in the Swedish L2 learning context.

Sammanfattning (summary)

Syntes

Detta forskningsprojekt designades och genomfördes utifrån det centrala antagandet att studenter kan dra nytta av att använda ordinlärningsstrategier (eng. Vocabulary Learning Strategies) (VLS) för att utveckla sitt ordförråd. Därigenom antas att själva inlärningsstrategierna representerar en avgörande del i språkinlärningsprocessen. Det saknas specifik forskning som studerar användandet av VLS hos vuxna elever på grundläggande nivå i svenska som andraspråk (L2). Avsaknad av verktyg för att studera målgruppen i denna kontext föranledde utvecklandet av ett nytt datainsamlingsinstrument. Detta instrument, The Swedish Vocabulary Learning Strategy Survey (SVLSS), utvecklades specifikt för att representera användandet av VLS i denna målgrupp. Tillämpningen av och datainsamling via SVLSS avsåg att skapa en primär bild av andraspråkselevers ordinlärningsstrategier. Utöver studiens primära frågeställningar (se nedan), lades även explicit fokus på att främja transparent implementering av instrumentet för insamling och tillämpning av alla använda datainsamlingsverktyg. Vidare var studiens syfte att lägga fram förslag på användningsområden för SVLSS-instrumentet som ett diagnostiskt och reflektivt verktyg för lärare i svenska som andraspråk. Studiens tre primära frågeställningar var:

1. Vilken VLS anger andraspråkselever i svenska att de använder?
2. Vilka individuella skillnader förekommer hos svenska andraspråkselever som kan bidra till bättre förståelse om hur denna grupp lär sig svenska ord?
3. Vilka mönster förekommer i den rapporterade användningen av VLS hos andraspråkselever i svenska?

En serie av fem studier utfördes för att behandla projektets syften (avsnitt 1.4). I artikel I användes intervjuer och inlärningsuppgifter för insamling av eliciterade och observerade data i elevers (N = 13) VLS-användning i syfte att etablera en preliminär lista av VLS. Denna lista blev resultatet i den första versionen av instrumentet SVLSS (1.0). I påföljande studie (artikel II) samlades data (N = 182) in via SVLSS (1.2) för att utvärdera instrumentet på ett transparent sätt genom dess tillgänglighet samt verktygspunkternas pålitlighet och validitet. Utvärderingen resulterade i en preliminär VLS-taxonomi bestående av sex kategorier vilka bedömdes vara relevanta för målgruppen. Förbättringar av instrumentet genomfördes med utgångspunkt från utvärderingarna samt en jämförelse med andra VLS-frågeformulär. De etablerade SVLSS- punkterna och taxonomin (artikel III) resulterade i SVLSS 2.0. Den nya versionen bestod av en VLS-taxonomi med fyra ingående kategorier och användes för insamling av VLS-användningsdata från målgruppen (N = 401) för att utforska möjliga mönster av VLS-användning hos både det totala urvalet och de enskilda elevgrupperna (report I). Parallellt genomfördes en kvalitativ undersökning av svenska andraspråkselevers (N = 111) uppfattningar av vad som krävs för att 'kunna ett ord' (artikel IV), vilket gav en utökad förståelse för den individuella skillnaden inom målgruppen. Detta bidrog till en mer holistisk uppfattning om eleverna som VLS-användare och inlärare.

Sammanfattningen av de primära resultaten från dessa studier kan beskrivas i tre delar: instrumentella och metodologiska resultat, teoretiska och taxonomiska resultat samt resultat kopplade till andraspråkselevers självrapporterade VLS-användande. Den sista delen angående VLS-användning är i sin tur uppdelad i tre delar som inbördes relaterar till de primära frågeställningarna.

Instrumentella och metodologiska resultat

En tydlig och transparent redogörelse av de instrumentella processerna fastslogs initialt i projektet i syfte att ge en kontext till datainsamling och analys samt ge läsaren tydlig förståelse för hur resultaten hade producerats. Den första studien eftersträvade att specifikt designa ett instrument för att samla in VLS-

användningsdata i den svenska andraspråksinlärningskontexten. Instrumentet skapades genom en bottom-up-process som använde datainsamling från samma målgrupp som också skulle få ta del av resultaten. Processen resulterade i flertalet steg som ledde till utvecklingen av SVLSS 2.0, vilken är den nuvarande versionen av instrumentet som används för datainsamling av VLS-användningen av andraspråkselever i svenska. Resultatet från varje steg i processen användes för att motivera och bidra till nästa utvecklingsversion av SVLSS.

Det bör noteras att både top-down-designade frågeformulär (t.ex. Gu & Johnson 1996) samt bottom-up-designade frågeformulär (t.ex. Stoffer 1995) är möjliga tillvägagångssätt som kan leda till insamling av VLS-data i ett instrument som avser att mäta en underliggande hypotetisk konstruktion. Den huvudsakliga skillnaden mellan de två metoderna är huruvida en taxonomi är förbestämd eller inte. Det innebär att processen att ta fram VLS-punkter och revidera dem genomförs för att antingen matcha en förutbestämd hypotetisk konstruktion (top-down-design), eller för att skapa en konstruktion utan förutbestämd taxonomi (bottom-up-design). Den senare tillåter datainsamlingen att avgöra vilken form den hypotetiska konstruktionen får. Med detta synsätt, strävar båda de metodologiska angreppssätten efter ett instrument innehållande VLS-punkter som representerar ett specifikt system av underliggande begrepp som kan användas vid datainsamling. Således kommer den valda metoden att påverka vilka punkter som *slutligen* representeras och mäts, jämfört med vad de var menade att representera och mäta. En bottom-up-metod kan bli något mer otydlig i förhållande till vad punktlistan representerar på grund av den stora mängd tolkningar som krävs för att beskriva hypotetiska konstruktioner genom till exempel explorativ faktoranalys (eng. exploratory factor analysis) (EFA). På grund av avsaknaden av en VLS-taxonomi för andraspråksinlärare i svenska ansågs en bottom-up-metod vara bäst lämpad för föreliggande forskningsprojekt.

Resonemanget ovan förankrades i tanken att en bottom-up-metod skulle resultera i en generering av ett underliggande system för VLS-klassificering som skulle ligga närmare målgruppen och kontexten än vad en top-down-metod skulle göra på grund av att man då skulle behöva välja en redan existerande VLS-taxonomi som inte var direkt anpassad till målgrupp och kontext. Nedan följer resultat från användning av denna process vilken visar att valet av bottom-up-metoden har resulterat i det som avsågs, nämligen ett instrument som kan användas för insamling av VLS-data för den tänkta målgruppen och kontexten.

I artikel I följdes VLS-punkter från den första versionen med Stoffers (1995) VOLSI-design samt Barcroft (2009) och Mackey och Gass (2012) metod. Inspelning, transkribering och innehållsanalys av intervjustruktur och struktur av inlärningsuppgifter genomfördes för att underlätta generering av punkter

vid insamling. Intervjustrukturen, strukturen av inlärningsuppgiften och individuella skillnader mellan elever påverkade troligen den insamlade datamängden. Analys av datan resulterade dock initialt i en lista av 74 VLS-punkter som användes för att utforma SVLSS 1.0. Pilotstudien som genomfördes vid den första insamlingen visade att det förekom en del otydligheter i formuleringar och ordval samt representativitet av VLS. Några av dessa svårigheter löstes genom omarbetning, men flera problem återuppstod efter att utvärdering av validitet och reliabilitet utfördes i artikel II.

Den valda metoden för att undersöka validiteten av SVLSS 1.2 (genomgång efter pilotstudien) var explorativ faktoranalys (EFA) på grund av dess explorativa angreppssätt. EFA är en bruklig metod att använda vid validering i inlärningsstrategisammanhang (Oxford 1990; Stoffer 1995; Gu 2018). Resultaten i artikel II då EFA tillämpades rekommenderade en faktorstruktur med sex konstrukter i SVLSS 1.2, och de användes även för att etablera en preliminär tolkning av den VLS-taxonomi som tillämpas i SVLSS. Denna taxonomi tillsammans med faktorpoängen i EFA användes för att organisera punktlistan i SVLSS 1.2 i sex VLS-kategorier. Därefter identifierades och löstes tre huvudsakliga problem med punkternas språkliga utformning gällande klassificering och specificering av VLS-koncept. Dessa identifierades genom tillämpning av ”cross-loading” av faktorer och faktorpoäng vilket ledde till en möjlighet att utforska möjliga svårigheter med punktlistan i SVLSS 1.2. Punkter reviderades för att bli språkligt tydligare och bättre överensstämma med de underliggande begreppen i VLS-kategorierna. De punkter som inte passade in togs bort.

Vidare vidtogs steg för att underlätta revideringen av punktlistorna från SVLSS 1.2 till 2.0. I artikel III genomfördes en översiktlig jämförelse av andra VLS-frågeformulär och deras respektive taxonomi (Fan, 2003; Gu & Johnson, 1996; Nation, 2013; Schmitt, 1997; Stoffer,1995) för att förstärka och revidera VLS-taxonomin som användes i organisationen av SVLSS. En metaanalys av VLS-taxonomin tillsammans med överväganden av ordinlärningsprocesser (Nation 2013) resulterade i en implementering av en ny 4-kategorisk VLS-taxonomi. Den nya taxonomin fokuserade på kärnbegrepp som representerade strategiska tillvägagångsätt vid tillägnande av ordförråd i ett andraspråk. Dessa var (i) att befästa ny ordkunskap, (ii) förbättring av tidigare kunskap, (iii) produktiv användning av ordkunskap samt (iv) självreglerande ordinlärning. Tillämpningen av denna modell ledde till ytterligare revidering av SVLSS-punkterna inklusive utbyten av vissa begrepp samt användning av vissa punkter från andra VLS-frågeformulär för att uppnå en starkare representation av modellen med fyra kategorier. Sammanfattningsvis resulterade förändringarna av punktlistan i SVLSS 1.2 och resultaten från EFA-analysen och den jämförande analysen av VLS-taxonomierna i den punktlista som används i SVLSS 2.0-instrumentet.

För att besvara projektets tre forskningsfrågor beslöts i rapport I att SVLSS 2.0-instrumentet skulle användas för att samla in VLS-data från vuxnas andraspråksinlärning i svenska. Vidare eftersträvades demografisk information som skulle kunna användas för att utforska elevernas individuella skillnader i användning av VLS. Analys och tolkning av datan utfördes för att undersöka möjliga mönster av VLS-användning samt för att beskriva elevprofilerna i denna kontext. Även om reliabiliteten i punktlistorna i de flesta VLS-kategorier i SVLSS 2.0 var tillräckligt hög, hjälpte inte konfirmatorisk faktoranalys (CFA) för att bekräfta (eller motsäga) den för formuläret antagna underliggande konstrukten av fyra faktorer. Det var möjligen för tidigt att genomföra en konfirmatorisk faktoranalys med tanke på att stora förändringar uppträdde i punkterna i SVLSS mellan version 1.2 och 2.0. Resultaten hade tjänat på ytterligare revisioner av instrumentet för att förbättra punkternas representativitet.

Användningen av den ovannämnda metodologiska processen för att skapa och revidera SVLSS-instrumentet har visat sig vara en användbar metod för att etablera en lista av inlärningsstrategier som elever i svenska som andraspråk använder själva och kan använda (artikel I). Vidare har arbetet med SVLSS sammanställt klassificerade grupper av VLS som liknar andra VLS-taxonomier (artikel II, III). SVLSS har reviderats vad gäller punkter också ur ett läsbarhetsperspektiv (artikel II) och har slutligen även genererat teoretiska antaganden baserade på jämförelse och representativitet (artikel III, rapport I).

Teoretiska och taxonomiska resultat

Som en konsekvens av både sammanställningen av punktlistan i SVLSS samt en beskrivning för att stötta och tolka insamlingen av användardata av VLS, har två VLS-taxonomier genererats under utvecklingen av SVLSS-instrumentet. De första versionerna av SVLSS (1.0, 1.1, 1.2; artikel I) genomfördes ursprungligen inte med avseende på en specifik VLS-taxonomi, då avsikten var att samla in SVLSS-punkterna genom en bottom-up-metod.

Efter datainsamling med hjälp av SVLSS 1.2 (artikel II) indikerade EFA att det fanns en underliggande 6-faktorsmodell som överensstämde med SVLSS-punkterna. Denna 6-faktorsmodell utvecklades med utgångspunkt i EFA-poäng. Punktlistan grupperades efter de högsta och bästa punkt-till-faktor-poängen. Detta resulterade i en VLS-taxonomi med sex kategorier för att klassificera punkterna i SVLSS 1.2. De framtagna VLS-kategorierna speglar komponenter som också finns i annan VLS-forskning inom SLA (eng. Second Language Acquisition). Detta gäller t.ex. de VLS-kategorier som presenteras i Stoffers (1995) VOLSI, Schmitts (1997) VLS-taxonomi, Fans (2003) VLSQ

och Gu och Johnsons (1996) VLQ. Framförallt innehöll den nybildade SVLSS 1.2 VLS-taxonomielement från Nations (2013) taxonomi som presenterade strategier för att bearbeta kunskap om ord, strategier som använde olika källor för att tillägna sig kunskap om ord, strategier för planering av inlärning av ord samt strategier för att genomföra aktiviteter (t.ex. kommunikation) vilket leder till förbättrad ordkunskap.

Även om resultatet från EFA i artikel II bidrog med en guide med vilken man kunde etablera en preliminär VLS-taxonomi för SVLSS, krävdes vidare studier av denna modell för att utröna i vilken mån den var representativ i förhållande till andra tillgängliga VLS-klassifikationer och begreppssystem. Denna jämförande analys genomfördes med avsikten att utvärdera den taxonomi som byggts upp av insamlade data från andraspråkselever i svenska med bottom-up-metoden samt analys av datan (artikel I, II) genom att jämföra den med andra modeller av VLS-klassificering. På det sättet kunde SVLSS kompletteras, förbättras eller berikas för att uppnå en mer stabil och valid representation av möjliga VLS som elever kunde rapportera att de använde.

En jämförande analys av flertalet VLS-taxonomier genomfördes, vilket resulterade i en revidering av VLS-taxonomin i SVLSS 1.2. En ny VLS-taxonomi med fyra kategorier föreslogs vara lämplig för att modifiera och revidera punktlistan i SVLSS 2.0. VLS-taxonomierna i SVLSS 2.0 som använts i Nations taxonomi baserades på steg i tillägnandet av ord som en struktur som kunde fokusera modifieringen och revideringen av punkterna i SVLSS 1.2, vilket resulterade i följande kategorier: Strategier för att förbättra ordkunskap (uppdelad i 'övnings'-strategier och 'kodande'-strategier), strategier för etablering av ny ordkunskap (uppdelad i 'kontext'-strategier och 'käll'-strategier), produktiva aktiveringsstrategier och självreglerande strategier. Detta klassificeringssystem ledde till borttagande av vissa punkter som inte längre passade in i modellen eller som inte avspeglade strategisk orientering (d.v.s. inlärningsövertygelse, stil, reflektion). Punkter lades även till från andra VLS-taxonomier, vilka innehöll liknande klassificeringar, för att utöka representativiteten i täckningen av punkterna som inkluderades i SVLSS.

Dessa revideringar av taxonomin resulterade slutligen i en ny punktlista på 69 punkter i SVLSS 2.0 samt fyra större VLS-klassificeringar (totalt sex kategorier inklusive undergrupper). Den uppdaterade SVLSS 2.0 distribuerades till andraspråkselever i svenska för att samla in data om deras VLS-användning och studera möjliga mönster av inlärningsprofiler i elevernas rapporterade VLS-användning. Dessutom var avsikten att utforska validitet och reliabilitet i instrumentet (rapport I).

Rapporterad VLS-användning av andraspråkselever i svenska

Frågeställning ett

Iakttagelser från artikel I, artikel II och rapport I gällde frågeställningen om vilka VLS andraspråkselever i svenska använder. Artikel I visade att eleverna rapporterade användning av 41 olika strategier per intervju- och uppgifts inlämningstillfälle. Av dessa var 'aktiva' strategier högre (29 per deltagare) än 'meta' strategier (14 per deltagare) i genomsnitt. Detta kan indikera att de andraspråksinlärare som intervjuades tenderade att använda mer specifik VLS för att tillägna sig ett större ordförråd i svenska som andraspråk. Dock är det mer troligt att resultatet är avhängigt metoden för datainsamlingen och mer representerar en kombination av kontextbaserad VLS-användning och val än en beskrivning av en helt exakt representation av frekvensen eller typen av VLS som eleverna använde i deras 'vardagliga' inlärningsprocess.

Artikel II samlade in elevers rapporterade VLS-användningsdata genom distribution av SVLSS 1.2 för att först tolka och sedan utforska pålitligheten, validiteten och möjliga svagheter i instrumentets underliggande konstruktstruktur enligt dess utvalda punkturval. Insamlade data angående VLS-användning indikerade att denna grupp av elever använde fler strategier än genomsnittet och rapporterade en genomsnittlig strategianvändning på 3.25/5. Denna höga genomsnittliga användning indikerar att dessa elever rapporterade användning av en mängd olika typer av strategier hellre än att förlita sig på endast ett fåtal. Faktum är att när deltagarna grupperades efter olika demografiska faktorer (t.ex. ålder, utbildningsbakgrund, grad av flerspråkighet), var alla genomsnittliga rapporterade använda strategier mellan 3.02 och 3.48. Det tyder på en potentiellt homogen grupp med avseende på variationen av VLS som användes. Den mest rapporterade använda VLS i målgruppen karakteriserades av strategier som slog upp ett ords betydelse (t.ex. i en ordbok). Dessutom rapporterades användande av liknande eller tidigare införskaffad lexikal kunskap för att gissa sig till eller lära sig ord. Studenterna jämförde även kunskap om svenska ords egenskaper med kunskap om ord i andra språk. Dessa strategier är vanliga vid ordinlärning för att inlärning överhuvudtaget ska äga rum. Alla de undersökta strategierna verkar spegla klassifikationen i VLS att ta reda på ords betydelse (genom källor eller gissning), definierad i SVLSS 2.0 VLS-taxonomin. De strategier som endast rapporterades av ett fåtal studenter kunde kategoriseras som för specifika varför många elever inte kunde relatera till dem. Dessa var VLS som beskrev ord i målspråket (eng.

Target Language) (TL) utan att säga själva ordet, dessutom rapporterades användning av mnemoteknik och gruppstudier.

I rapport I beskrevs insamlandet av VLS-användardata från andraspråksinlärare i svenska genom distribution av SVLSS 2.0. I genomsnitt rapporterade eleverna att de oftare använde sig av mer än en VLS,. M = 3.11 av 5.0, vilket återigen är ett tecken på stor spridning av VLS-användning i målgruppen. Det tyder eventuellt på en högst motiverad och erfaren grupp av elever. Analysen och tolkningen av insamlade data organiserades med hjälp av en uppdaterad VLS-taxonomi som speglade kategorier av strategier för att etablera kunskap om ord (källa och kontext), förbättra införskaffad ordkunskap (repetition och kodande), aktivering av produktiva kunskaper och självreglering vid inlärning. Användning av dessa klassifikationer och deskriptiv statistik visade att de mest använda strategierna var både strategiska undergrupper för att etablera ny kunskap: via kontext (M = 3.6, SD = 0.78) och genom källor (M =3.38, SD =0.69). De minst använda strategierna var båda undergrupper i strategier som förbättrade redan införskaffad kunskap: via repetition (M = 2.7, SD = 0.65) och via kodning (M = 2.94, SD = 0.56). Vidare studier av dessa resultat visade att individuella VLS:er som hade hög rapporterad användning verkade spegla de mest använda strategierna identifierade i resultatet från artikel II. Relaterande av ordkunskap i målspråket till annan ordkunskap i andra språk, användning av besläktade ord, slå upp ord i ordbok och att vara uppmärksam på användbara svenska ord var de mest rapporterade tillämpade VLS:erna i rapport I. Samtliga återfanns även bland de mest använda VLS:erna i artikel II. De strategier som användes minst rapporterades i rapport I (d.v.s. märka upp föremål, kreativ användning av ordförråd, användning av flashcards och minnestekniker) och speglar återigen de nischade strategier som också rapporterades minst i artikel II.

Två separata urval från målgruppen besvarade enkäten i den andra versionen av SVLSS. Dessa svar uppvisade mer frekvent användning av strategier för att etablera ny ordkunskap genom olika typer av källor eller genom att använda kontexten för att gissa eller för att utöka sin existerande ordkunskap. Implikationer från dessa resultat kommer att diskuteras vidare i följande avsnitt med fokus på frågeställning två och tre.

Frågeställning två

Den andra frågeställningen i projektet fokuserar på att utforska relationen mellan VLS-användning och skillnader mellan individuella elever och elevgrupper. Resultat från artikel IV och rapport I klargör dessa skillnader med avseende på andraspråksinlärares åsikter om andraspråkselevers ordförråds-

inlärning och VLS-användning enligt vissa demografiska grupperingsfaktorer.

Insamlade skriftliga svar på de öppna frågorna, 'Vad tycker du att det innebär att kunna ett ord? Vilken information är viktig för att man ska kunna ett ord?', analyserades och tolkades med hjälp av ett protokoll och en innehållsanalys med stöd från Nations (2013) taxonomi över ordkunskap (artikel IV). Svenska andraspråkselevers svar visade att de egenskaper av ordkunskap som var viktigast för att 'kunna ett ord' kunde kategoriseras enligt Nations beskrivning som: form, betydelse och användning. Alla tre kategorier av ordkunskap rapporterades med relativt likartad frekvens. Detta visar att alla tre kategorier av ordkunskap verkar viktig för eleverna vid ordinlärning. Den vanligast angivna delen av ordkunskapen som var viktig var både den skrivna och talade *formen* av ordet, samt dess *betydelse* i både ett generellt samt varierande perspektiv. Detta visar att målgruppen verkar värdesätta hur ord uttalas och stavas och vad ett ord betyder som den allra viktigaste kunskapen. Därför är detta troligen det primära att ta till sig vid inlärning av ord för att man som inlärare ska anse att man 'kan' ett ord. Analysen visade även att vissa deltagare vid flera tillfällen uttryckte att kunna använda ett ord 'på rätt sälle, vid rätt tidpunkt och på rätt sätt' representerade att 'kunna ordet'. Dessutom framkom att vissa elever inte fokuserade på enbart ordkunskap utan även på ett performansbaserat synsätt i form av 'kan-göra'-uttryck, t.ex. att kunna använda ett ord på ett sätt som en modersmålstalare förstår. Detta betyder att eleverna värdesätter kommunikativ kompetens (produktiv kunskap) i samband med kunskap om ord. De kräver att en sådan färdighet existerar för att kunna anse att ordet är inlärt.

Resultaten från artikel IV kan länkas samman med resultaten från frågeställning ett, vilket innebär att de VLS som de vuxna andraspråkseleverna rapporterade att de använde, var den inlärning de ansåg vara nödvändig. De viktigaste delarna i ordkunskapen var orden i tal och skrift samt ordens betydelse. I artikel II och rapport I tyder resultaten på att elevernas användningsstrategier för att tillägna sig ny ordkunskap var att hämta dem från olika källor samt se hur orden användes i kontext. Resultaten i artikel IV illustrerar att *typen* av ordkunskap som huvudsakligen etableras genom strategianvändning är ordens talade och skrivna form samt ordets betydelse.

Vidare kan man konstatera att elevers värdering av automatisering och förmåga i form av 'kan-göra' samt uppfattning av vad det innebär att 'kunna ett ord', kan kopplas till resultaten i rapport I där elever uppger att de strategier som är näst vanligast inkluderade aktiv produktion och självreglerande strategier. Om elever värdesätter konceptet automatiserad ordkunskap som en viktig del i att 'kunna' ett ord skulle det innebära att de även skulle värdesätta mer kommunikativ kunskap och produktiva strategier för att underlätta utvecklingen av dessa förmågor.

Den andra frågeställningen besvarades även genom variansanalys som genomfördes på elevers rapporterade VLS-användning i målgrupper vilket resulterade i grupperingar av elever beroende på olika bakgrundsvariabler. I målgruppen konstaterades signifikanta skillnader gällande inlärares ålder, kunskaper i svenska och tid som språket studerats. Vad som inte påvisade någon signifikant skillnad var elevers grad av flerspråkighet, modersmål och total vistelsetid i en svenskspråkig miljö.

Elever över 30 års ålder rapporterade användning av signifikant mer produktiva aktiveringsstrategier, men färre strategier för att erhålla ny ordkunskap (både från källor och kontext) än elever under 21 års ålder. Dessa resultat motsäger de resultat som presenterades i Lee och Oxford (2009) vilka påvisade att fler vuxna elever tenderade att förlita sig mer på planering, organisation och utvärderingsstrategier (självreglerande). Yngre elever tenderade att rapportera sociala strategier (produktiva). Elever med B1 i färdighetsnivå använde signifikant mer produktiva aktiveringsstrategier och strategier för att etablera ny ordkunskap (källa och kontext) än elever på nivåerna svag A1, A1 och A2. Dessutom använde elever som endast studerat svenska i 0-1 månad betydligt färre produktiva aktiveringsstrategier samt strategier för etablering av ny ordkunskap genom kontext, än de elever som studerat mer än 3 månader. Sammanfattningsvis rapporterade äldre andraspråkselever som hade bättre språkkunskaper i svenska, de som studerat några månader eller mer, användning av fler strategier som förlitar sig på produktivitet än unga, mindre kunniga elever som nyligen påbörjat sina svenskstudier. Dock skall nämnas att äldre elever med sämre språkkunskaper i svenska och de som nyligen påbörjat svenskstudier rapporterade att de använder färre strategier för att etablera ny ordkunskap.

Innebörden av dessa resultat verkar vara att ju högre skicklighetsnivå och ju längre tid som ägnats åt svenska som andraspråk (vilket förmodligen också bidragit till en större, bredare och djupare ordkunskap), desto mer förlitar sig eleven på en mer kreativ, kommunikativ och produktiv strategi i användningen av sin ordkunskap. Dessa resultat överensstämmer med Oxford och Nyikos (1989) som fann att elever som tillbringade mer tid med ett språk tenderade att använda mer kommunikativa strategier. Detta är troligen också kopplat till värdesättning av automatiserad ordkunskap och förmågan att använda denna kunskap på lämpligt kommunikativt sätt, som påvisades i artikel IV. Dock inser inte elever detta förrän de har tillägnat sig ett tillräckligt stort ordförråd som de faktiskt kan använda i aktiv produktion. Därmed är den signifikanta skillnaden i produktiv strategisk användning mellan grupper med hög respektive låg språkfärdighet uppdelad efter inlärningstid. Med andra ord, ju mer ord eleven kan, desto fler ord kan den lära sig (Nation 1990).

Något som överraskar är att äldre elever använder mer produktiva strategier men färre strategier för att tillägna sig ny ordkunskap. Anledningar till detta

kan sökas i både ansträngningsgrad samt detaljnivå i information om målgruppen. Att vid de tidiga stadierna i språkinlärning förvänta sig att en äldre och mer erfaren andraspråksinlärare tar sig tiden, anstränger sig och 'sitter ner och studerar' kanske inte alltid passar en upptagen vuxens livsstil. Således föredrar dessa elever att 'lära sig genom att göra'. De föredrar ett kommunikativt och produktivt språkbruk framför traditionella studieformer. Äldre svenska andraspråksinlärare tenderar att vara högmotiverade elever med specifika anledningar som motiverar dem i deras inlärning (t.ex. karriär, relationer, social integrering). Därför tar de ibland det de lärt sig i klassrummet direkt till kontexten där svenska praktiseras och lärs in. De använder svenskan produktivt för att höja sin kunskapsnivå i språket i den specifika kontexten. Strategier för att etablera ny ordkunskap, vilket är den vanligaste strategin hos elever med lägre språkig färdighet kan ibland, som också påpekas i artikel II och rapport I, ersättas med metoder för att 'använda existerande ordförråd för att utöka ordförrådet' genom produktiva metoder. Omvänt kan åldersgrupper i studien, i ett bekvämlighetsurval, bidra med betydligt mindre detaljerad uppdelning av urvalet inom variansanalys (ANOVA). Detta får till följd att elever äldre än 30 år uppvisar resultat som både liknar resultaten hos elever med lägre språkfärdighet (0-1 månaders studietid i svenska) såväl som resultat hos elever med högre språkfärdighet (>3 månaders studietid).

En sista intressant observation rör bakgrundsvariablerna i målgruppen där det inte finns någon signifikant skillnad i VLS-användning. För samtliga elever som tillfrågades under studien fanns det signifikant skillnad mellan individer med avseende på ålder, skicklighet, tid i kontakt med målspråket och tid som eleven lagt på att lära sig målspråket. Dock kunde ingen signifikant skillnad hittas beträffande elevens modersmål eller hens grad av flerspråkighet. Detta resultat är något förvånande då tidigare studier beträffande användning av strategier för att lära sig språk (eng. Language Learning Strategy) (LLS) och flerspråkighet har visat att flerspråkiga elever vanligen uppvisar mer effektiv (Nation & McLaughlin 1986), mer frekvent och mer varierad användning av strategier för språkinlärning än enspråkiga elever (se t.ex. Psaltou-Joycey & Kantaridou 2009). Anledning till avsaknaden av bevis i denna studie för användningen av olika VLS är oklar. Möjligen var modersmålet mycket olikt svenska eller så var urvalet för litet för att ge ett signifikant resultat. Ytterligare en möjlighet är att grupperingen av L1 i modersmålsgrupper inte var tillräckligt noggrant beskriven för att visa möjliga mindre skillnader mellan hur användare med olika modersmål hanterar VLS-användning. Slutligen är det också möjligt att beskrivningen av grad av flerspråkighet inte var tillräckligt detaljerad för att representera den komplexa relationen till språken i individernas liv. Detta resulterar i otillräcklig eller inkorrekt beskrivning av elevernas individuella skillnader.

Frågeställning tre

Den sista frågeställningen i detta projekt behandlar existensen av relevanta signifikanta mönster i andraspråkselevernas rapporterade VLS-användning. Slutsatser dragna mellan resultat från artikel I, artikel II och artikel IV är relevanta i denna sammanfattning, vilket även resultatet från ANOVA- och klusteranalysen genomförda i rapport I är, vilken har visat sig vara den viktigaste studien i detta forskningsprojekt. I ANOVA-resultaten identifierades några preliminära mönster där det fanns signifikanta skillnader mellan inlärare i målgruppen. I rapport I utforskades dessa mönster vidare för att klargöra möjliga existerande användarprofiler i elevers VLS-användning. En klusteranalys genomfördes på VLS-användningsdata uppdelad efter VLS-modellens sex kategorier samt bakgrundsinformation om elever via SVLSS 2.0-instrumentet. Från denna analys framkom två signifikanta klusterprofiler. Grupp ett innehöll elever med låg till ingen färdighet i svenska, kort studietid i svenska, låg exponering för svenska och en lägre ålder. Grupp två karakteriserades av elever som var nybörjarelever men med lägre studietid av svenska än grupp ett samt mer varierade i ålder.

Grupp två hade högre värden i alla kategorier i VLS än grupp ett med undantag för strategier för förbättrad kunskapsinhämtning via repetition. Den signifikanta skillnaden som sågs i VLS-användning mellan grupperna korresponderar till tidigare resultat som visar att äldre inlärare (Stoffer 1995) och elever med bättre kunskap om språket (Oxford 1990) tenderade att använda fler inlärningsstrategier oftare än yngre elever. Dock bekräftas inte de resultat som tidigare beskrivits från Devlina (1996) samt Lee och Oxford (2009) som påvisade att äldre elever tenderar att använda mer metakognitiva strategier för språkinlärning.

Denna skillnad tyder på att kortare erfarenhet av studier i svenska hos andraspråksinlärare (grupp ett) kan verka som en barriär för användningen av mer sofistikerade VLS (dvs produktiv aktivering och självreglering). Detta resulterar i att eleverna förlitar sig mer på övnings- och kodningsstrategier för initial grundläggande konkretisering av det svenska ordförrådet innan de får tillgång till strategier som kan expandera ordförrådet (dvs strategier för att etablera ordkunskap). ANOVA-resultaten, beskrivna i föregående avsnitt, visar att ju mer kunskap en inlärare har desto mer kan användas för att utveckla ett större ordförråd (produktivt och kommunikativt). Därigenom kan inläraren också exponeras för, ha tillgång till och i slutändan lära sig ytterligare ord. Ökningen av strategianvändning mellan grupperna av yngre, mindre skickliga, nyblivna elever och äldre elever med mer grundläggande språkkunskap och mer erfarenhet har en positiv korrelation med deras kunskap i målspråket och vice versa (Stoffer 1995; Chang Tsai & Chang 2009; Fan 2003; Kung & Chen 2004;

Nemati 2008) och med högre nivå av uppnådd språkinlärning (Ahmed 1989; Griffiths, 2003; Lai 2009; Lightbown 1999; Oxford & Green 1995). Dessa resultat bekräftades även på mycket finfördelade nivåer för grupper avseende inlärningstid och kunskaper i målspråket.

Innebörden av detta tyder på att andraspråksinlärares ordinlärning även på nybörjarnivå (t.ex. 1-3 månader och färdighetsnivåer tidig-A1, A1, A2) borde stöttas av VLS i så hög utsträckning som möjligt för att underlätta effektiv inlärning och tillväxt av ordförrådet. Reflekterande, explicit utlärd LLS och VLS kan resultera i en mer varierad VLS-användning (Chamot 2005; Hajer et al. 1995; Mizumoto & Takeuchi 2009; Rubin et al. 2007), och en förbättrad och effektiv språkinlärning (Chamot 2007; Leaver 2003; Nyikos & Fan 2007; O'Malley & Chamot 1990).

Slutsatser

SVLSS-instrumentet kan användas av forskare i dess nuvarande form (2.0) för att utforska användningsmönster inom VLS hos vissa grupper av elever. För lärare kan instrumentet användas för diagnostiska ändamål eller för instruktionssyften av VLS. Användningen av tidigare klassifikationssystem och frågeformulär för studier av VLS inom SLA-kontexten har tidigare kritiserats. Den instrumentella processen som rapporteras i detta projekt så väl som resultat i form av en taxonomisk representation av VLS-kategorier har presenterats med så mycket transparens och tillgänglighet som möjligt för den intresserade läsaren. På detta sätt kan förhoppningsvis de insamlade resultaten från det använda instrumentet tolkas med så mycket klarhet som möjligt utifrån uppgifter om datainsamlingsmetodens ursprung, och intentionerna bakom dess design och utveckling. Vidare är det tillämpade VLS-klassificeringssystemet beskrivet så detaljerat som möjligt genom hela den iterativa processen och revisionsprocessen, med samma förhoppning att bistå med klarhet i förhållande till hur data är organiserade och tolkade under analysen.

En stor utmaning som kvarstår i den nuvarande konstruktionen av SVLSS-instrumentet är frånvaron av åtgärder som redogör för datainsamling kopplad till inlärningskontexten och ordinlärningsuppgifter relaterade till en enskild elevs VLS-användning. För att på ett korrekt sätt representera elevernas VLS-användning ur ett mer holistiskt och kontextuellt perspektiv, har förändringar föreslagits av SVLSS-instrumentet som antingen förstärker SVLSS-punkterna med fält för att inkludera kontext- och uppgiftsinformation. Alternativt kan instrumentet kompletteras med punkter i kontext och uppgift, och därefter be elever att svara på vilken representation av VLS de använder i sådana situationer.

Framtida forskning bör inte enbart fokusera på elevernas VLS-användning utan även på VLS-instruktionerna inom den svenska andraspråksinlärningskontexten, på datainsamlingen som också måste ta elevernas individuella skillnader i beaktande, inlärningskontext samt ordinlärningsuppgifter kopplade till VLS-användning. För att kunna underlätta framtida forskning inom detta fält måste SVLSS genomgå upprepade och regelbundna revisioner och förbättringar för att vara användbart som ett progressivt datainsamlingsinstrument inom SLA och VLS i andraspråksinlärningskontexten i svenska.

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Appendix 1. Breakdown of Native Language Groups

Indo-Aryan	**Slavic**	**Romance**
Bengali	Bosnian	Catalan
Farsi	Bulgarian	French
Hindi	Croatian	Italian
Kurdish	Czech	Portuguese
Marathi	Macedonian	Romanian
Persian	Polish	Spanish
Punjabi	Russian	
Telegu	Ukrainian	
Urdu		

Koreanic	**Sino-Tibetan**	**Uralic**
Korean	Cantonese	Estonian
Japonic	Chinese	Finnish
Japanese	Myanmar	Hungarian
Baltic	Taiwanese	**Semitic**
Lithuanian	Thai	Arabic
Turkic	**Germanic**	
Turkish	Dutch	
Helenic	English	
Greek	German	
Austronesian	Icelandic	
Filipino		

Appendix 2. Interview with Learning Task Question List and Script

Stimulated Recall Event – Task and Interview

Interview Questions:

1. Have you ever studied a second/foreign language before? What language(s)? How many? How long have you studied/spoke them?
2. Are you studying Swedish as a Second Language now?
3. Why are you studying Swedish? What is your motivation?
4. How are you going about studying? Classes, self-study, etc?
5. How often do you study every week?
6. Out of that much time studying, how much time do you spend on vocabulary learning?
7. How important is vocabulary learning to you on a scale from 1-10? Why?

(Administer Think-aloud Vocabulary Learning Training and Task, see pg. 2)

8. Why do you think you used those methods to learn the vocabulary?
9. What would be your ideal method for learning that vocabulary? Why?

(Explain Vocabulary Learning Strategies (VLS), see pg. 3)

10. What kinds of VLS do you use? Why? How often?
11. What classroom VLS do you use?
12. What VLS do you use at home, or when you study alone?
13. What VLS do you use when you study with others?
14. What kinds of deliberate VLS do you use? Why? How often?
15. What kinds of unintentional VLS do you think you use? Why? How often?
16. What kinds of VLS do you wish you used? Why?
17. Do you think VLS are useful in learning Swedish as a Second Language? Why?
18. Which kinds of VLS do you think are most/least useful? Why?
19. Are there any VLS you use that you think are specific to Swedish learning?
20. Do you have anything else to say about VLS from your personal experiences in language learning?

Think-Aloud Training Task:

We will now begin a part of the interview involving what is called a "Think-aloud task". I will give you a vocabulary learning task to work on, and I would like to you try and speak out loud exactly what you are thinking while you are trying to learn, or work on, the task. We will start with a practice task before we begin with the real task. I will give you 20 Swedish words with their English definitions. Try to learn them. I will model a "think-aloud" first:

(Model Think-aloud with the practice word-learning task.)

Do you have any questions? Now you can try:

(Discuss any problems or questions, then move on to the real task.)

Think-Aloud Vocabulary Learning Task:

The following is 20 Swedish words and their English translations are considered "intermediate" level words to know. Please check to make sure you have not met any of these words before.

(Give word list to participant. It will have the Swedish words and English equivalents only.)

Please tell me now if you know any of these words.

(Omit words known from task)

I will give you time to learn the meaning of these words, afterwards you will be quizzed on them. Please use the think-aloud method while you study. You may begin now.

(After the think-aloud study time is over, distribute Word Quiz)

Now, please try to recall the meaning of the words that you just studied. Please use the Think-Aloud procedure to talk about the method you use to remember.

Great. Now that you are finished, I have some questions for you.

Vocabulary Learning Strategies Explanation:

Vocabulary Learning Strategies are…

Things you do to learn, use or influence better command of vocabulary that generally have goals (e.g., deliberate: learning new words, direct: learn these 20 words), and you do them on purpose whether mentally or physically.

Sometimes they can be described as 'deliberate' or 'unintentional' strategies.

Examples of "deliberate" strategies might be to use flashcards or to write out vocabulary lists of new words you want to remember. These often have a clear goal in mind, and a thought-out method to achieve that goal.

Examples of "unintentional" strategies might be to 'read as much as I can in the 2nd language', or 'thinking about the way that I study'. These are often less goal-oriented and are more vague in terms of the method used.

Also, in terms of vocabulary learning, there are some distinctions to make between strategies. Some strategies, for example, are for learning "new" unfamiliar/unknown words and discovering their meanings. Other strategies can be used to reinforce already known or partial knowledge of words.

People use all kinds of methods to learn new or already known vocabulary. Any of these techniques are considered "Vocabulary Learning Strategies".

B1/B2 (i) Word list (With translations)

Substantiv

ett område *an area*

ett redskap *a tool*

en ansträngning *an effort*

en fiende *an enemy*

en höna *a hen*

ett mönster *a pattern*

en jämförelse *a comparison*

Verb

krossa *crush*

rinna *drain*

uppmuntra *encourage*

bevara *perserve*

snacka *chat*

tugga *chew*

peta *poke*

Adjektiv

pigg *perky*

onödig *unnecessary*

nedstämd *miserable*

osynlig *invisible*

rörig *messy*

ivrig *eager*

(Words taken from Rivstart B2 word list)

Word List (i) Quiz

en fiende _____

en höna _____

_____*chat*

_____ *chew*

peta _____

_____ *a pattern*

en jämförelse _____

_____ *messy*

_____ *eager*

ett område _____

ett redskap _____

_____ *an effort*

_____ *crush*

rinna _____

_____ *perky*

onödig _____

_____ *miserable*

_____ *invisible*

uppmuntra _____

bevara _____

B1/B2 (i) Word list (Without translations)

Substantiv

ett område

ett redskap

en ansträngning

en fiende

en höna

ett mönster

en jämförelse

Verb

krossa

rinna

uppmuntra

bevara

snacka

tugga

peta

Adjektiv

pigg

onödig

nedstämd

osynlig

rörig

ivrig

(Words taken from Rivstart B2 word list)

B1/B2 (ii) Word List (With Translations)

Substantiv

Ett lag *a team*

Ett modersmål *a native language*

En bransch *an industry*

En sten *a stone*

Ett stöd *a support*

En rädsla *a fear*

En framgång *a success*

Verb

Ändra *to change, alter*

Förenkla *to simplify*

Blänka *to shine, glitter, twinkle*

Nypa *to pinch*

Kämpa *to fight, struggle*

Strunta i *to ignore*

Gnälla *to whine*

Adjektiv

Andfådd *breathless*

Självklar *obvious*

Motsatt *opposite*

Hjälplös *helpless*

Stel *stiff, rigid*

Osynlig *invisible*

B1/B2 (ii) Word List (Without Translations)

Substantiv	Verb
Ett lag	**Ändra**
Ett modersmål	**Förenkla**
En bransch	**Blänka**
En sten	**Nypa**
Ett stöd	**Kämpa**
En rädsla	**Strunta i**
En framgång	**Gnälla**

Adjektiv

Andfådd

Självklar

Motsatt

Hjälplös

Stel

Osynlig

Word List (ii) Quiz

_____ *a fear*

_____ *a success*

Andfådd _____

Förenkla _____

_____ *to shine, glitter*

Nypa _____

Självklar _____

Ett lag _____

Ett modersmål _____

_____ *to fight, struggle*

_____ *to ignore*

_____ *an industry*

En sten _____

_____ *a support*

Gnälla _____

_____ *opposite*

_____ *helpless*

Stel _____

_____ *invisible*

Ändra _____

Appendix 3. Examples of Vocabulary Cards Used in Vocabulary Learning Task

SET I

ETT OMRÅDE (n.) *area, territory*

e.g. Förbjudet område!

Related words:
zon (zone)
district (district)

ETT REDSKAP (n.) *a tool, implement, instrument*

e.g. ***Man får arbetshandskar och redskap på platsen.***

Related words:
verktyg (utility)
apparat (apparatus)

EN ANSTRÄNGNING *(n.), an effort, exertion*

e.g. ***Så bra det kan bli utan ansträngning!***

Related words:
strävan (endeavor)
försök (attempt)

Appendix 4. Letter to Participants for SV-LSS 1.0 and 2.0 Distribution (English)

2016-06-23

DEPARTMENT OF SWEDISH

Dear Participant,

Thank you for considering taking part in this research study performed by Richard LaBontee of the Swedish Second Language Department at the University of Gothenburg. The working title of this research project is:

"Investigating Vocabulary Learning Strategies in the Swedish Second Language Learning Context"

This study will be asking students who are learning Swedish as a language other than their native one to describe the strategies that they use to help them remember and use vocabulary. There are several phases of research in this longitudinal doctoral project. The current phase will investigate adult (age 18+), beginner (A1-B1) Swedish learners' vocabulary learning approaches through the use of a web- or paper-based questionnaire. The questionnaire is designed to not only collect information on how learners' strategically interact with language learning, but also to provide them a unique chance to reflect on their own language learning habits and styles.

All participants involved in any part of this study will remain anonymous both in data storage and in subsequent publications resulting from data gathered. Participants involved in the study are doing so voluntarily, and may decline from participation at any time for any reason. By taking part in this study and indicating that you "agree" with terms stated here and on the "Demographic Survey" filled out prior to participation, you understand the information presented here and consent to the access of your provided data for academic purposes.

The researchers involved in this project would like to thank you for taking the time to be involved in this project and welcome any questions, comments or feedback on anything they encounter with it. Contact information and a link to the questionnaire is listed below.

http://www.tinyurl.com/SwedishWordSurvey

Many thanks and best wishes,

Richard LaBontee
Doctoral Candidate
Swedish as a Second Language
University of Gothenburg
richard.la.bontee@svenska.gu.se
+46 076-077-3599

Appendix 5. Letter to Participants for SV-LSS 1.0 and 2.0 Distribution (Swedish)

2016-06-23

INSTITUTIONEN FÖR SVENSKA SPRÅKET

Kära deltagare,

Tack för att deltar i denna studie utförd av Richard LaBontee, doktorand vid institutionen för svenska språket vid Göteborgs universitet. Arbetsnamnet för detta forskningsprojekt är:

"Investigating Vocabulary - Learning Strategies in the Swedish Second Language Learning Context"

Denna studie komma att fokusera på studenter som studerar svenska som andraspråk, och de strategier som de använder för att hjälpa dem att komma ihåg och använda sitt ordförråd. Detta långitudinella doktorandprojekt består av flera faser. I fasen som beskrivs i denna undersökning kommer studeras vuxna (18+ år) nybörjare på A1-B1–nivå i svenska språket. Avsikten är att ta reda på vilka inlärningsmetoder olika individer använder genom att de fyller i en webbaserad enkät. Enkäten är utformad för att samla information om hur studenterna interagerar vid språkinlärning och för att ge dem en unik möjlighet att reflektera över sina egna språkinlärningsvanor och -stilar.

Alla deltagare i studien kommer att förbli anonyma vid lagring av insamlade data. Det gäller även vid eventuella publikationer av slutsatser och sammanställningar av insamlade data. Deltagandet i studien är frivilligt. En student kan när som helst meddela att hen inte längre vill delta i studien utan att ange anledning. Genom att delta i denna studie och genom att fylla i bakgrunds enkät samt indikera att du acceptera villkoren för studien, samtycker till att dina data används för forskningsändamål.

Ditt deltagande i denna forskningsstudie är mycket värdefullt. Alla frågor om deltagande välkomnas och besvaras. Kommentarer och återkoppling på innehåll mottages också tacksamt. Se kontaktuppgifter och en länk till enkäten nedan.

http://www.tinyurl.com/SwedishWordSurvey

Med vänliga hälsningar,

Richard LaBontee
Doktorand i svenska som andraspråk
Göteborgs Universitet
richard.la.bontee@svenska.gu.se
+46 076-077-3599

Appendix 6. Handouts to Participants for SVLSS 2.0 Distribution

Institutionen för svenska språket

GÖTEBORGS UNIVERSITET

Hello!

Thank you for your participation in a research study concerning Swedish language learning! The study, "*Investigating Vocabulary Learning Strategies in the Swedish Second Language Learning Context*" looks to ask adult (age 18+), beginner learners of Swedish language about the ways they learn Swedish words both in a variety of contexts.

To collect this information, we ask to fill out the following questionnaire, The Swedish Vocabulary Learning Strategy Survey (SVLSS 2.0), which you can find at this website:

http://www.tinyurl.com/SVLSS

Your responses will be kept anonymous, and will be used in research designed to help both teachers and students of Swedish language in Sweden. Thank you for your involvement! Please do not hesitate to contact the lead researcher with any questions or comments.

Richard LaBontee
University of Gothenburg
Richard.La.Bontee@svenska.gu.se
+46 76 077 3599

Institutionen för Svenska språket

GÖTEBORGS UNIVERSITET

Hello!

Thank you for your participation in a research study concerning Swedish language learning! The study, "*Investigating Vocabulary Learning Strategies in the Swedish Second Language Learning Context*" looks to ask adult (age 18+), beginner learners of Swedish language about the ways they learn Swedish words both in a variety of contexts.

To collect this information, we ask to fill out the following questionnaire, The Swedish Vocabulary Learning Strategy Survey (SVLSS 2.0), which you can find at this website:

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Your responses will be kept anonymous, and will be used in research designed to help both teachers and students of Swedish language in Sweden. Thank you for your involvement! Please do not hesitate to contact the lead researcher with any questions or comments.

Richard LaBontee
University of Gothenburg
Richard.La.Bontee@svenska.gu.se
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Appendix 7. SVLSS 1.2 Item List

Swedish Vocabulary Learning Strategy Survey (1.0)		
Production Based (6 items)	ITEM1	I speak or write in Swedish as much as I can to practice vocabulary.
	ITEM2	I use vocabulary words in casual speech to help me remember them better.
	ITEM3	I practice vocabulary by describing the meaning of words in Swedish without saying the word out loud.
	ITEM4	I create new mnemonic phrases [sentence used to assist memory] to help me remember vocabulary.
	ITEM5	I make up my own sentences to help me remember specific words.
	ITEM6	I will use words over and over in similar situations to help me remember them.
Investigation Based (11 items)	ITEM7	I take note of common/important words I don't know so I can review them later.
	ITEM8	I look up word meaning or details by using some kind of dictionary.
	ITEM9	I look up Swedish words that I find in everyday life.
	ITEM10	I ask others (teachers, friends, natives) about Swedish word knowledge.
	ITEM11	I try to guess word meaning, pronunciation, or spelling based on what I already know about the word or where I find it.
	ITEM12	I try to read Swedish texts to find new vocabulary.
	ITEM13	I try to listen carefully for Swedish vocabulary information.
	ITEM14	I try to pay attention to useful or interesting Swedish language that I find in everyday life.
	ITEM15	I watch TV or film [in Swedish, or with Swedish subtitles] to try and find or practice vocabulary.
	ITEM16	I watch Swedish TV or film specifically without subtitles on to try and learn vocabulary from context.
	ITEM17	I make use of pictures (in text) or gestures (in speech) to help me understand Swedish vocabulary that I find in that context.

Lexical-Associative (13 items)	WHEN LEARNING SWEDISH VOCABULARY, I…	
	ITEM18	… try to remember words by the way they sound.
	ITEM19	… try to remember how to spell words.
	ITEM20	… try to remember how words change with grammar in Swedish.
	ITEM21	… try to remember if a word is an 'ett ord' [ett word] or 'en ord' [en word].
	ITEM22	… try to remember compound words (words made up of 2 or more words) by paying attention to the different words inside them.
	ITEM23	… try to remember words by making language rules to connect them.
	ITEM24	… use cognates (similar words across languages) to help remember words.
	ITEM25	… try to use key-words (words used to help us recall other words) to help learn or remember words.
	ITEM26	… try to organize words [or groups of words] by word types to help me remember them.
	ITEM27	… try to put Swedish words into groups that have similar meanings or themes to help me remember them.
	ITEM28	… try to connect Swedish words to words I already know in my native language.
	ITEM29	… try to connect other related Swedish (or native language) words to the word being learned.
	ITEM30	… try to connect Swedish words to their opposite meaning or translation to help me remember.
Context-Associative (10 items)	WHEN LEARNING OR REMEMBERING SWEDISH VOCABULARY, I…	
	ITEM31	... remember the context I find words in to help me remember them.
	ITEM32	... remember the sentence context for words I found in those sentences.
	ITEM33	... remember previous times that I saw or read a word to help me remember it better.
	ITEM34	... use interesting contexts (e.g., a story, action, emotion) to help me remember words.
	ITEM35	... connect images or pictures in my mind with words to help me remember them.
	ITEM36	... connect tone or music to words to help me remember them.
	ITEM37	... remember the location I saw certain words to help me remember them.
	ITEM38	... use time-related information to help me remember words.
	ITEM39	... mix up the order of words I am learning to help train myself learn them in a different way.
	ITEM40	... will remember words through common expressions or idioms that they are found in.

	WHEN LEARNING OR REMEMBERING SWEDISH VOCABULARY, I…	
Memory Based (12 items)	ITEM41	... memorize words however I can.
	ITEM42	... write down vocabulary notes (when I study alone, in class, etc.).
	ITEM43	... will review words or my own notes repeatedly over time.
	ITEM44	... read words out loud [or quietly to myself] over and over.
	ITEM45	... write individual words down over and over.
	ITEM46	... write down lists of grouped words over and over.
	ITEM47	... listen to recordings of vocabulary words I want to remember over and over.
	ITEM48	... use lists of words that I write down to give myself quizzes.
	ITEM49	... review words in study groups or with others.
	ITEM50	... use flashcards/index cards (or similar study tools) to help me review words.
	ITEM51	... label items (i.e., in my home, workplace) in order to review them often over time.
	ITEM52	... stare at words to help me remember them visually.
Motivation and Planning of Learning (10 items)	ITEM53	My motivation for Swedish word learning comes from my natural interest in the language.
	ITEM54	My motivation for Swedish word learning comes from other reasons than my interest in the language.
	ITEM55	I skip difficult/unknown words that I come across in order to read/listen for overall meaning.
	ITEM56	I am willing to use Swedish vocabulary even if I might make mistakes or it makes me feel uncomfortable.
	ITEM57	I plan my own learning before, during, or after I study.
	ITEM58	I plan to review [specific amounts of] vocabulary over specific time periods.
	ITEM59	I plan to use my free time to casually practice Swedish vocabulary.
	ITEM60	I use technology as a means of learning.
	ITEM61	I put words into different kinds of groups or lists so I can keep myself organized while I learn.
	ITEM62	I pay attention to Swedish vocabulary that is especially difficult for me to remember.

Awareness of Learning Situation (12 items)	ITEM63	I reflect on vocabulary learning in Swedish in general.
	ITEM64	I reflect on my personal learning style, strengths, and/or weaknesses when studying Swedish vocabulary.
	ITEM65	I reflect on errors I make and my accuracy when using my Swedish vocabulary.
	ITEM66	I reflect on my stress and anxiety from using Swedish vocabulary.
	ITEM67	I reflect on how using different vocabulary learning strategies affects my learning of Swedish vocabulary.
	ITEM68	I reflect on the importance of learning Swedish vocabulary in terms of my overall language learning.
	ITEM69	I reflect on comparing Swedish to other languages I know or speak when learning Swedish vocabulary.
	ITEM70	I think about my direction of translation when studying Swedish words.
	ITEM71	I reflect on the socio-cultural impact of my learning Swedish vocabulary.
	ITEM72	I reflect on the feeling I get from Swedish words that I find.
	ITEM73	I notice grammar associated with how Swedish words change in different situations to help me learn them better.
	ITEM74	I reflect on the nature of the sound of Swedish language when learning and recalling words.

Appendix 8. The SVLSS 2.0

Swedish Vocabulary Learning Strategy Survey

SVLSS Version 2.0

Part 1: Demographic Information

Age: _____ Other language(s) spoken: _____

Native language(s): _____ [Ex: German, B2] _____

_____ _____

_____ _____

(Please mark one with 'X', OR fill in your own answer under "Other")

	High school diploma	*Some college, no degree*	*Associate degree*	*Bachelor degree*	*Master degree*	*Doctoral Degree*	*Other*
Highest degree of education completed:							
	None	*Beginner (A1, A2)*	*Intermediate (B1, B2)*	*Advanced (C1, C2)*	*Native*		
Swedish language proficiency:							
	Self-study	*SFI (Swedish for immigrants)*	*University/College courses*	*Private Tutoring*	*Language training software*	*Other*	
Main approach to Swedish studying:							

Time spent studying Swedish (in months): _____

Time spent living in Swedish speaking place: _____

Why do you want to learn Swedish?

_____

_____

_____

_____

Part 2: Vocabulary Learning Strategies

In the following sections, please look at the statements and choose a response on the scale (1 to 5) that is most true of you **when you study Swedish vocabulary most recently**.

1 = Very untrue of me 2 = Untrue of me 3 = Neutral 4 = True of me 5 = Very true of me

For example:
I write Swedish words over and over to remember them.

If you really write words over and over whenever you study Swedish, mark the response (5) with a "√" in the corresponding space provided.

	1	2	3	4	5
I write Swedish words over and over to remember them.					✓

		1	2	3	4	5
1	I write words over and over to remember them.					
2	I review words I have learned, repeatedly over time.					
3	I write down words in lists to help me remember them.					
4	I quiz myself on lists of words until I know them.					
5	I read words out loud or in my head over and over to remember them.					
6	I write words on one side of a card, and the meaning on the other side to help me review words.					
7	I mix up lists of words into different orders to learn them in a different way.					
8	I listen to recordings of words over and over to help me remember the way they sound.					
9	I label items (furniture, colors, etc.) to help me remember the Swedish words for them.					
10	I remember words by associating them with the time I learned them.					
11	I use key-words (connecting a word to another word) to help me learn. *Ex: "Snacka [to chat] makes me think of 'snacks', and 'people talk over snacks', which brings my thoughts back to 'snacka'."*					
12	I remember words by associating them with the physical location I found them.					
13	I remember words by associating them with tone or music I found with them.					
14	I connect other related Swedish words to the one I am learning. *Ex: hör [hear] and lyssna [listen]*					
15	I connect mental pictures to words to help me remember them.					
16	I associate words to the sentence, passage, or text I find them in.					
17	I make mnemonic phrases (made up sentence to connect meanings) to help remember Swedish words. *Ex: "It's not fun to be messy!" to help learn 'rolig' [fun] vs. 'rörig' [messy]*					

		1	2	3	4	5
41	I practice using words with classmates/peers to help me remember them better.					
42	I watch Swedish TV/film/internet videos to find words and see how they are used.					
43	I read Swedish text/books/news to look for new Swedish words and see how they are used.					
44	If I don't know a word that I encounter, I will write it down so I can look it up.					
45	I use some kind of dictionary to look up word meaning and details. *Ex: Online, physical, monolingual, bilingual*					
46	I ask others (teachers, friends, natives) about Swedish words to learn them better.					
47	I learn Swedish compound words by learning or looking up the meaning of the different words that make them up. *Ex: 'självklar' [obvious] = 'själv' [self] + 'klar' [clear]*					
48	I write down word information notes when I study *Ex: word type, grammar use, phonics, etc.*					
49	I make a note when I see a useful expression or phrase.					
50	I write down both the Swedish word and my first/other language synonym of words I look up.					
51	If I think a word is commonly used, I will note it down with its meaning so I can learn it.					
52	I keep a vocabulary notebook of Swedish words I am learning.					
53	I listen to radio programs in Swedish to find words.					
54	I listen carefully to native speakers' Swedish to help me learn pronunciation.					
55	I use partial knowledge about a word to help me try to guess the meaning. *Ex: I remember seeing or hearing it somewhere, but don't know exactly what it means.*					
56	When I see pictures nearby or related to Swedish text, I use them to help me guess the meaning of Swedish words there.					
57	I use my previous life knowledge or knowledge of a topic to help me guess the meaning of Swedish words.					
58	I check my guessed meaning of a new word against the context I find it in to see if it fits.					
59	I analyze word structure (prefix, root, and suffix) when guessing the meaning of a word. *Ex: I know 'o-' in 'osynlig' [invisible] means [un-], and 'syn-' means [sight], so maybe I can guess the rest of the meaning.*					
60	I look for other words or expressions in the passage that support my guess about the meaning of a new word.					
61	II look for any definitions or notes in a passage/text that support my guess about the meaning of a word.					
62	I plan out my strategies for studying Swedish vocabulary before I start.					
63	I try to pay attention to useful or interesting Swedish words that I find in everyday life.					
64	I try to relax whenever I feel afraid using a new word.					

		1	2	3	4	5
18	I connect Swedish words to their synonyms or antonyms to help me remember them. *Ex: Synonyms; 'lycklig och glad' = [happy], Antonyms; 'glad och sorlig' = [happy and sad]*					
19	I use cognates (similar words across languages) to help remember Swedish words. Ex: 'intressant' [Swedish] and 'interesting' [English]					
20	I try to relate Swedish words to words in my first/other language to help me remember them.					
21	I remember some words by the way they change with grammar in Swedish. *Ex: verb tenses like 'prata', 'pratar', 'pratade'*					
22	Remembering if nouns are 'ett' or 'en' words in Swedish helps me learn them.					
23	I group words into categories (e.g., animals, jobs) when I study.					
24	I make up language rules to help remember certain words. *Ex: 'ett ord' are usually 'things', not living beings)*					
25	I try to remember words by their spelling, letter by letter.					
26	I physically act out words in order to remember them better.					
27	I break down words into prefixes, stems, and suffixes to help me learn them. *Ex: 'osynlig' [invisible] = o- [in-] syn [view] -lig [-able]*					
28	I use special memorization techniques to remember Swedish words (Ex: memory palace, peg method) *Memory palace is used to create mental location to place word information in, so it can be recalled more easily; Peg method connects words with easy-to-remember sequences (letters, numbers) to facilitate easier recall.*					
29	I study words together with pictures that represent of their meanings.					
30	When studying, I will try to paraphrase a word's meaning to see if I know it.					
31	I will make up rhymes to help me remember Swedish words.					
32	I remember together words that sound similar (either both Swedish words, or a Swedish word and a word in my first/other language).					
33	I organize words by word types (verb, adjective, noun) when studying.					
34	I speak and write Swedish words I'm learning as much as I can.					
35	I use Swedish words in situations that require certain words that I want to remember better. *Ex: Planning to use 'kvitto' [receipt] when paying for something.*					
36	I make up my own sentences to help me remember words.					
37	Using collocations and idioms helps me remember words. *Ex: Collocation - Learning the phrase 'Tack så mycket' [Thanks very much] without necessarily knowing what each word means; Idiom - 'lätt som en plätt!' [easy as pie!]*					
38	I compose creative work using Swedish words I know (e.g., letters, poetry, songs, stories, collages, etc.) to practice words. *Ex: Letters, Poetry, Songs, Stories, Collages*					
39	I practice new words by having conversation with native Swedish speakers.					
40	I use online platforms to practice my Swedish. *Ex: Duolingo, Memrize, etc.*					

		1	2	3	4	5
65	I encourage myself to use new words even when I am afraid of making a mistake.					
66	I am aware of when I have not used a Swedish word correctly.					
67	I learn easy words first or skip hard-to-learn words.					
68	I look for Swedish words in Swedish media I'm personally interested in. *(music, movie, news, games, etc.)*					
69	I choose which Swedish words are most important for me to learn before I really start studying.					

(Please proceed to the final page!)

Part 3: Open-ended question

How do you choose the words that you study in Swedish?

_____

_____

_____

_____

Thank you very much for taking part in this study on Swedish vocabulary learning!

Without the help of participants like yourself, this kind of research into language and learning would be impossible.

Best regards,

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Appendix 9. SVLSS Pre-Questionnaire Instructions

Swedish Vocabulary Learning Survey

Welcome and thank you for taking the time to fill out the questionnaire! It will take 15-30 minutes to complete. Please read each section carefully.

By checking the box below, you indicate that you agree to take part in the Questionnaire on Swedish Vocabulary Learning Strategies. You also are indicating that you understand the information you provide may be used anonymously with other responses in academic reporting of data. You agree that the information you provide may be used in educational research by the University of Gothenburg. *

☐ I agree.

How to Take the Survey

In the following sections, please look at the statements and choose a response on the scale that is most true of you, WHEN YOU STUDY SWEDISH VOCABULARY.

On the scale, the following responses correspond to the numbers:

1 = Very untrue of me
2 = Untrue of me
3 = Neutral
4 = True of me
5 = Very true of me

Responses should reflect how you approach Swedish vocabulary learning MOST RECENTLY.

All examples provided with statements are intended to help clarify tricky terminology, rather than classify that learning strategy. Please respond to all statements with what is true for you according to your interpretation of the statement.

Okej, jag förstår! *

◯ Nu kör vi!