



The Latest Research Trends and Methods in Language Learning Strategies: A Systematic Review

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Introduction

Decades after its birth in the 1970s, language learning strategies (LLSs) research has been found to be “alive and kicking,” (Dörnyei & Ryan, 2015, p. 141) notwithstanding the existence of its many inconsistent conceptual issues. Oxford (1989) asserted that language learning strategies (LLSs) was one of the most important variables influencing performance in a second language. Chamot (2001) pointed out that LLSs were important in second language acquisition (SLA) for two major reasons—first, they contribute to gaining insights into the cognitive, social, and affective processes involved in language learning by investigating the strategies used by second language learners; and second, it may be possible to teach less successful language learners to use the strategies that characterize their more successful peers, thus helping students who are experiencing difficulty in learning a second language become better language learners (p. 25).

What Are the Conceptual Issues?

Definition

Definitional blurriness has been a main problem with LLSs. Ellis (1994) stated that definitions of LLSs have tended to be ad hoc and atheoretical. Dörnyei (2005) asserted that, over the years, there has been a lack of an unambiguous theoretical definition of its construct. Cohen (2011) came up with a working definition of LLSs, that is, they are thoughts and actions, consciously chosen and operationalized by language learners, to assist learners in carrying out a multiplicity of tasks from the very onset of learning to the most advanced levels of target-language performance. Oxford (2018) redefined LLSs as mental actions that are sometimes also manifested in observable behaviors. They are complex, dynamic, teachable, and at least partially conscious; they can be orchestrated to meet immediate learning needs in specific contexts; they can involve various self-regulation functions (e.g., cognitive, emotional/affective, motivational, social, and metastrategic) to (a) accomplish current language tasks, (b) improve language learning and performance, and/or (c) enhance long-term proficiency (p. xxiv). This definition stresses the active nature of LLSs, which are selected by learners to achieve a language learning goal. Griffiths (2019) concluded a general agreement on four key defining characteristics and defined LLSs as “actions chosen



by learners for the purpose of learning language” (p. 2). Although an agreed definition on LLSs has not been reached yet, as claimed by Oxford and Crookall (1989), the most important thing was that no matter what they are called, strategies can make learning more efficient and effective.

Taxonomy

Classification of LLSs has been another highly contentious issue. To date, there is no clear model of types of LLSs. The most popular and most widely used way of categorizing LLSs has been Oxford's (1990) *Strategy Inventory for Language Learning (SILL)*, which was designed to be a tool for promoting awareness and discussion among learners as well as a research instrument. *SILL* identified six strategy types: memory strategies (relating to how students remember a new language), cognitive strategies (relating to direct interaction with the learning materials), compensation strategies (enabling students to make up for limited knowledge), metacognitive strategies (relating to how students manage the learning), affective strategies (relating to controlling emotions), and social strategies (relating to learning by interacting with people). In recent studies, Dornyei (2005) categorized LLSs into five kinds: (1) commitment control strategies, relating to helping preserve or increase learner's goal commitment, (2) metacognitive control strategies, relating to monitoring and controlling concentration and for curtailing unnecessary procrastination, (3) satiation control strategies, relating to eliminating boredom and adding extra attraction or interest to the task, (4) emotion control strategies, relating to managing disruptive emotional states or moods and for generating emotions that are conducive to implementing one's intentions, and (5) environmental control strategies for the elimination of negative environmental influences by making an environment an ally in the pursuit of a difficult goal. Griffiths (2008, 2003) produced a questionnaire for students (*the English Language Learning Strategy Inventory or ELLSI*) that does not rely on fixed, pre-determined strategy categorization. Instead, categorization is carried out post hoc, according to the themes which emerge from the students' responses.

Theories

For theories in LLSs research, as described by Foster and Skehan (2013), we have been in a “theoretical muddle” (p. 610), and “a fully satisfactory solution has not been achieved yet” (Skehan, 2015, p. 168). Attempting a rationalization of strategy theory, Griffiths (2018) concluded that, although LLSs are essentially cognitive, this cognitive base is complicated by a number of other contributing theoretical influences, including Behaviorism, Structuralism, Poststructuralism, Socioculturalism, Humanism, Complexity Theory, Dynamic Systems Theory, and Eclecticism. In other words, the theory underlying LLSs is eclectic and extremely complex; it is as complex, in fact, as any other human behavior, suggesting that attempts to oversimplify it should be approached with great care. She suggested that what we should do was draw inclusively on insights from many divergent theoretical traditions (Griffiths, 2019).

A Brief History of LLSs Research

The initial research in LLSs centered on good language learners, which explored characteristics that successful learners had (Naiman et al., 1978; Rubin, 1975; Stern, 1975; Wong-Fillmore, 1979) for the purpose of offering insights for less successful learners to learn a second language. Following this initial research, LLSs research flourished in the succeeding decades. Studies in this period mainly highlighted the important role that LLSs played in SLA (Dreyer & Oxford, 1996; O'Malley & Chamot, 1990; Oxford, 1990; Park, 1997; Wenden, 1991; Wenden & Rubin, 1987). In this period, Oxford (1990) developed a multi-faceted *Strategy Inventory for Language Learning (SILL)* – a simple-to-use strategy inventory, which has been extensively used by researchers to explore language learners' use of LLSs. Many scholars

contributed to the rich studies on LLSs underlying the important role these strategies played in SLA (for a review, see Wenden & Rubin, 1987). In recent years, LLSs have been challenged by calls for shifting LLSs research to a broader research area – self-regulation (Tseng et al., 2006). Self-regulation refers to the degree to which individuals are active participants in their own learning; it is a more dynamic concept than learning strategy, highlighting the learner’s own “strategic” efforts to manage their own achievement through specific beliefs and processes (Zimmerman & Risemberg, 1997). The conceptualization of self-regulation provides a much broader perspective than LLSs. Other components, in addition to LLSs, were provided by Kuhl and Goschke (1994), Winnie and Perry (2000), and Zeidner and others (2000) in a long list: goal setting, strategic planning, action plans and action schemata, monitoring and metacognition, action control, volitional control mechanisms, strategic tactics and operations, effective time management, self-motivational beliefs (self-efficacy, outcome expectations, intrinsic interest, goal orientation, etc.), evaluation and self-reflection, receiving and processing feedback, experiencing pride and satisfaction with one’s efforts, and establishing a congenial environment (Dörnyei, 2005).

How Are LLSs Investigated?

The major objective of data collection in LLSs research, according to O’Malley and Chamot (1990), was to elicit information about the ways in which the strategies were used with specific L2 tasks by various learners operating under different types of conditions. To achieve the objective, researchers have used a variety of approaches to identify the mental process of L2 learners. Chamot (2001) classified the approaches into observations and self-reports (e.g., interviews, stimulated recall interviews, questionnaires, written diaries and journals, and think-aloud protocols concurrent with a learning task). She stated that each of these methods had limitations, but so far, the only way to gain any insight at all into the unobservable mental learning strategies of learners was by asking them to reveal their thinking process.

Behavioral observation, usually classroom observation, is considered not effective in identifying learners’ mental operations. Some researchers found it unproductive (e.g., Rubin, 1981). Thus, research in this area has relied for the most part on learners’ self-reports. In addition to self-reports, questionnaires and interviews have been mostly used to collect data. Both of them call for retrospective accounts of the strategies that learners employ; they can require learners to report on the learning strategies they use in general or in relation to a specific activity (Ellis, 1994). Numerous studies have used these methods (e.g., Chamot & O’Malley, 1987; Naiman et al., 1978; Oxford, 1985; Rubin, 1981; Wenden, 1986). Some widely used questionnaires include, to name a few, the Strategy Inventory for Language Learning (SILL) by Oxford (1990), Language Strategy Use Inventory and Index (LSUII) by Cohen and Chi (2002), Motivated Strategies for Learning Questionnaire (MSLQ) by Pintrich et al. (1991), and Self-Regulated Capacity in Vocabulary Learning Scale (SRCvoc) by Tseng et al. (2006). Apart from questionnaires, diary studies and think-aloud tasks have been some other options of collecting information on LLSs (e.g., Abraham & Vann 1987; Brown, 1985).

Research Questions

More than four decades have passed since the outset of LLSs research. With the change of time and the development of technology, what are the changes in LLSs, especially regarding new research trends and methods? To answer the question, this review employed a systematic review methodology to examine empirical studies of LLSs which were conducted and published in journals from 2016 to 2020. The research questions are:

- (1) What are the latest research trends in LLSs?
- (2) How are LLSs investigated in the latest LLSs research?

Methodology

Defined by the Cochrane Collaboration (2005), a systematic review formulated clear questions, and used systematic and explicit methods to identify, select, and critically appraise relevant research, and to collect and analyse data from the studies that were included in the review. Systematic reviews aim to be comprehensive, methodical, explicit, transparent, and as unbiased as possible in the questions they explore and how they explore them. This review was unable to cover all kinds of articles in the database, thus only journal articles relating to SLA were included. In addition, doctoral dissertations were excluded in this review. It is possible that a review can be conducted systematically even though it does not apply some of the strict criteria needed to be categorized as a formal systematic review. Therefore, this review is better termed as a semi-systematic review, and it was conducted according to the following steps: (1) conducting a thorough search for empirical studies; (2) selecting and evaluating relevant studies and extracting information; (3) synthesizing research via a systematic table of the extracted information (Rose et al., 2017).

In an initial search of recent research articles in the Education Resources Information Center (ERIC) database for LLS(s), a total number of 16,519 articles were found in the past two decades. However, on further inspection of the articles, a great number of articles were not relevant to the research questions of this review, thereby inclusion criteria were established to narrow down the sample.

Selecting Articles

To select articles that were pertinent to the research questions of this systematic review, inclusion criteria were established. Chosen articles must (1) be empirical studies; (2) have been published in a peer-reviewed academic journal (3) be relevant to LLSs research; and (4) have been published between 2016 and 2020. This review chose to only examine articles published after 2016 for the purpose of finding out the latest research trends and research methods. ERIC is an authoritative online database of indexed and full-text education literature and was the resource used to gather articles. Only scholarly empirical studies were examined. In the search parameters, this review sought articles that contained “language learning strategies,” “language learner strategies,” “self-regulation,” and/or “self-regulated learning” in the title or abstract between the years of 2016 and 2020 (publication date). As for descriptors, terms such as “second language learning,” “English (second language),” “learning strategies,” “college students,” and “higher education” were included. This produced a manageable number of 41 articles. Each of the 41 articles was placed in a shared folder for further analysis.

On account of the limitations of using one database and the criteria of article selection, it is acknowledged that (1) some important articles or ideas which are not empirical studies or not in the five-year time range may be neglected; (2) this review does not claim to be comprehensive due to the method used in the collection of articles which could have been more thorough and systematic. However, this review did focus on the latest and most relevant studies which were conducted in LLSs research. Furthermore, the research questions of this review were well responded to.

Results

The 41 articles in LLSs research were classified into sixteen different trends (as shown in Table 1). Ten articles were relevant to vocabulary learning strategies, which were predominantly larger in number than others. What followed were articles on the topics of technology-based learning strategies and speaking strategies; each topic included four articles.

TABLE 1
Topics Involved in the Chosen Articles

<i>Trends</i>	<i>Number of articles</i>
Vocabulary learning strategies	10
Technology-based learning strategies	4
Speaking strategies	4
Listening strategies	3
Good language learner	3
Learning context	3
Learning styles	2
Think/read aloud method	2
Self-regulated learning	2
Writing strategies	1
Translation as a strategy	1
Self-coaching skill	1
Multilingualism	1
Language performance and LLSs	1
Self-regulation	1
Integrated skills tasks	1

Articles on listening strategies, the good language learner, and learning context respectively constituted three of the chosen 41 articles. Articles on these six topics accounted for the majority (66%) of the selected articles. The rest of the topics involved a wider range of topics which included learning styles, think/read-aloud method, self-regulated learning, writing strategies, translation as a strategy, self-coaching skill, multilingualism, language performance and LLSs, self-regulation, and integrated skills tasks.

The research methods used in the 41 chosen articles, as shown in Figure 1, included quantitative methods, qualitative methods, and mixed methods. The majority of the articles ($n = 18$) used exclusively quantitative approaches to collect data. Tolga (2018), for instance, used questionnaires – the Scale on Self-regulation in Learning (SSRL) and the Strategy Inventory for Language Learning (SILL) to collect data with 860 higher education students in a university. As a further example, El-Sakka (2016), gathered his data using pre-post speaking tests and a speaking anxiety scale from forty third-year university EFL students.

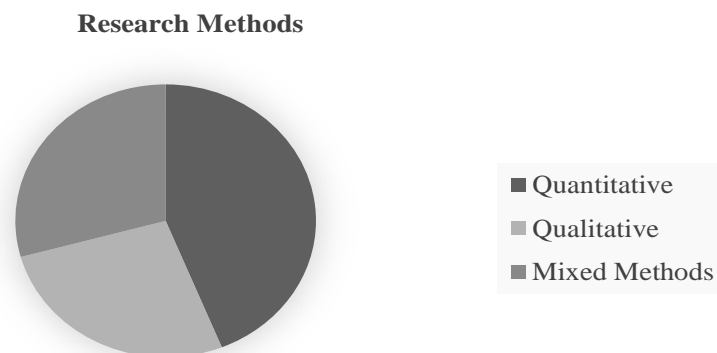


Figure 1. Research methods used in the chosen articles.

Eleven studies were exclusively qualitative. The methods included interviews, observation, narrative, research diaries, audio recordings, and transcriptions. One example of a qualitative design was Cornell et al.'s (2016) case study of three participants using semi-structured interviews, open observations during vocabulary study, quizzes, vocabulary journals, and other written and electronic materials throughout a semester. Twelve studies used mixed methods, for instance, Pawlak and Kermasz (2018), Abad and

Alzate (2016), and Kuama and Intharaksa (2016). In the study conducted by Pawlak and Kiermasz (2018), the use of LLSs in a second and third language was investigated through a combination of quantitative and qualitative designs. The SILL was first deployed to participants, and interviews were conducted later with selected participants.

Among all the instruments used, questionnaires were the most prevailing form of data gathering. The most widely used questionnaire–SILL was used in eight studies. Other questionnaires included some vocabulary learning questionnaires, online learning strategies, and so forth. Apart from using questionnaires to collect quantitative data, tests were also widely used. Twelve studies incorporated tests as the data gathering approach. The qualitative studies displayed a range of qualitative data collection methods ranging from interviews, journals, observations, field notes, recordings, oral, and written feedback.

Discussion

This review set out to examine the latest research trends and methods in LLSs. Through a systematic review methodology this review investigated 41 empirical journal articles published between 2016 and 2020. The findings showed that research trends involved a wide range of 16 topics: vocabulary learning strategies, technology-based learning strategies, speaking strategies, listening strategies, good language learner, learning context, learning styles, think/read-aloud method, self-regulated learning, writing strategies, translation as a strategy, self-coaching skill, multilingualism, language performance, self-regulation, and integrated skills tasks. Six topics among the 16 – vocabulary learning strategies, technology-based learning strategies, speaking strategies, listening strategies, the good language learner, and learning context were discussed more frequently than other topics. Consequently, they were considered as the major trends in LLSs research. The findings also revealed that research methods used to collect data in the chosen articles involved quantitative procedures, qualitative procedures, and mixed methods. There was a preference for quantitative methods and mixed methods.

The findings of this systematic review first implies that the latest LLSs studies continue underlying the important role that strategies play in SLA, which is consistent with early research. Second, quantitative methods are still more relied on, which is also in line with previous research. More qualitative designs and mixed methods could be explored in future studies. Regarding how the latest trends differ from previous research, first, the latest studies have explored a wider range of topics that were relevant to LLSs, especially technology related topics, for instance, technology-based learning strategies. Second, the conceptualization of LLSs has been challenged. For instance, self-regulation and self-regulated learning which have been advocated by scholars to replace LLSs, are gaining more scholarly attention.

This review contributes to LLSs research in the following ways. First, by using a systematic review, the review offers a different perspective to better understand the latest research in LLSs. Second, this review provides insights for future studies about what trends need more research attention and how research methods can be better used. As for the limitations of this review, first, choosing the ERIC database to gather articles was based on the researcher's convenience. ERIC was used solely to screen articles. It is possible that some important articles were omitted. If articles were gathered from multiple databases, then more influential journal publications may have been found and included. In that case the results would be more reliable. Furthermore, the criteria of selecting samples set by the researcher might have limited the number of valuable articles, especially publication date. For the purpose of investigating the latest research trends, the publication date was set to from 2016 to 2020. In addition, the selected articles were limited to research on college students. By doing this, a large number of articles in LLSs research were excluded. Third, the focus on empirical studies meant that some important theoretically-based articles may have been omitted, which may hinder an overview or general understanding of LLSs. For future studies, it is suggested multiple databases be employed to cover as many of the relevant studies

as possible. In addition to that, other types of work should be taken into consideration such as books, chapters, dissertations and more, in addition to journal articles.

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References

- Abad, J. V., & Alzate, P. A. (2016). Strategies instruction to improve the preparation for English oral exams. *PROFILE: Issues in Teachers' Professional Development*, 18(1), 129-147. <http://dx.doi.org/10.15446/profile.v18n1.49592>
- Abraham, R. G., & Vann, R. J. (1987). Strategies of two language learners: A case study. In A. Wenden & J. Rubin (Eds.) *Learner Strategies in Language Learning* (pp. 85-102). <https://doi.org/10.12691/education-2-11-1>
- Brown, C. (1985). Two windows on the classroom world: Diary studies and participant observation differences. In P. Larson, E. L. Judd, & D. S. Messerschmitt (Eds.), *TESOL '94: Brave New World for TESOL* (pp. 121-134). Newbury House.
- Chamot, U. A. (2001). The role of learning strategies in second language acquisition. In M. P. Breen (Ed.), *Learner Contributions to Language Learning: New Directions in Research* (pp. 25-43). Longmore.
- Chamot, U. A., & O'Malley, J. M. (1987). The cognitive academic language learning approach: A bridge to the mainstream. *TESOL Quarterly*, 21(2), 227-249.
- Cohen, A. D., & Chi, J. C. (2002). Language strategy use inventory and index. In R. M. Plaige, A. D. Cohen, B. Kappler, J. C. Chi, & J. P. Lassegard (Eds.), *Maximizing study abroad* (pp. 16-28). Center for Advanced Research for Language Acquisition, University of Minnesota.
- Cohen, A. D. (2011). *Strategies in learning and using a second language*. Longman.
- Cornell, R., Dean, J., & Tomaš, Z. (2016). Up close and personal: A case study of three university-level second language learners' vocabulary learning experience. *TESOL Journal*, 7(4), 823-846. <https://doi.org/10.1002/TESJ.247>
- Dörnyei, Z. (2005). *The psychology of the Language Learner: Individual Differences in Second Language Acquisition*. Lawrence Erlbaum Associates.
- Dörnyei, Z. & Ryan, S. (2015). *The Psychology of the Language Learner Revisited* (2nd Ed.). Routledge.
- Dreyer, C., & Oxford, R. L. (1996). Learning strategies and other predictors of ESL proficiency among Afrikaans speakers in South Africa. In R. L. Oxford (Ed.), *Language learning strategies around the world: Cross-cultural perspectives* (pp. 61-74). University of Hawaii, Second Language Teaching & Curriculum Center.
- Ellis, R. (1994). *The Study of Second Language Acquisition*. Oxford University Press.

- El-Sakka, S. M. F. (2016). Self-regulated strategy instruction for developing speaking proficiency and reducing speaking anxiety of Egyptian university students. *English Language Teaching (Toronto)*, 9(12), 22-33. <https://doi.org/10.5539/elt.v9n12p22>
- Foster, P., & Skehan, P. (2013). Anticipating a post-task activity: The effects on accuracy, complexity, and fluency of second language performance. *Canadian Modern Language Review*, 69(3), 249-273. <https://10.3138/cmlr.69.3.249>
- Griffiths, C. (2020). Language learning strategies: Is the baby still in the bathwater? *Applied Linguistics*, 41(4) 1-6. <https://doi.org/10.1093/applin/amy024>
- Griffiths, C. (2018). *The strategy factor in successful language learning: The tornado effect* (2nd ed.). Multilingual Matters.
- Griffiths, C. (2008). *Lessons from good language learners*. Cambridge University Press.
- Griffiths, C. (2003). *Language learning strategy use and proficiency: The relationship between patterns of reported language learning strategy (LLS) and proficiency with implications for the teaching/learning situation* (Publication No. 3094436) [Doctoral dissertation, The University of Auckland]. ProQuest Dissertations Publishing.
- Kuhl, J., & Goschke, T. (1994). A theory of action control: Mental subsystems, modes of control, and volitional conflict-resolution strategies. In J. Kuhl & J. Beckmann (Eds.), *Volition and personality: Action versus state orientation* (pp. 93-124). Hogrefe & Huber.
- Kuama, S., & Intharaksa, U. (2016). Is online learning suitable for all English language students? *PASAA: Journal of Language Teaching and Learning in Thailand*, 52, 53-82.
- Naiman, N., Frohlich, M., Stern, H. H., & Todesco, A. (1978). *The good language learner*. Ontario Institute for Studies in Education.
- O'Malley, J. M., & Chamot, A. U. (1990). *Learning strategies in second language acquisition*. Cambridge University Press.
- Oxford, R. L. (1985). *A new taxonomy for second language learning strategies*. ERIC Clearinghouse on Languages and Linguistics.
- Oxford, R. (1989). Use of language learning strategies: A synthesis of studies with implications for teacher training. *System*, 17, 235-247.
- Oxford, R. L. (1990). *Language learning strategies: What every teacher should know*. Newbury House.
- Oxford, R. L., & Amerstorfer, C. M. (2018). *Language learning strategies and individual learner characteristics*. Bloomsbury Academic.
- Oxford, R. L., & Crookall, D. (1989). Research on language learning strategies: Methods, findings, and instructional issues. *The Modern Language Journal*, 73(4), 404-419.
- Park, G. P. (1997). Language learning strategies and English proficiency in Korean university students. *Foreign Language Annals*, 30, 211-221.
- Pawlak, M., & Kiermasz, Z. (2018). The use of language learning strategies in a second and third language: The case of foreign language majors. *Studies in Second Language Learning and Teaching*, 8(2), 427-443. <https://doi.org/10.14746/ssllt.2018.8.2.11>
- Pintrich, P. R., Smith, D. A. F., Garcia, T., & McKeachie, W. J. (1991). A manual for the use of the motivated strategies for learning questionnaire (MSLQ). *Educational and Psychological Measurement*, 53, 801-813.
- Rose, H., Briggs, J. G., Boggs, J. A., Sergio, L., & Ivanova-Slavianskaia, N. (2017). A systematic review of language learner strategy research in the face of self-regulation. *System*, 72, 151-163. <https://doi.org/10.1016/j.system.2017.12.002>
- Rubin, J. (1975). What the "good language learner" can teach us. *TESOL Quarterly*, 9(1), 41-51.
- Rubin, J. (1981). Study of cognitive process in second language learning. *Applied Linguistics*, 11, 117-131.
- Skehan, P. (2015). Foreign language aptitude and its relationship with grammar: A critical overview. *Applied Linguistics*, 36(3), 367-384. <https://doi.org/10.1093/applin/amu072>

- Stern, H. H. (1975). What can we learn from the good language learner? *Canadian Modern Language Review*, 31, 304-18.
- The Cochrane Collaboration. (2005, May). Glossary of terms in the Cochrane collaboration. <http://aaz.hr/resources/pages/57/7.%20Cochrane%20glossary.pdf>
- Tolga, E. (2018). The investigation of self-regulation and language learning strategies. *Universal Journal of Educational Research*, 6(7), 1477-1485. <https://doi.org/10.13189/ujer.2018.060708>
- Tseng, W., Dörnyei, Z. & Schmitt, N. (2006). A new approach to assessing strategic learning: The case of self-regulation in vocabulary acquisition. *Applied Linguistics*, 27(1), 78-102. <https://doi.org/10.1093/applin/ami046>
- Wenden, A. (1986). What do second-language learners know about their language learning? A second look at retrospective accounts. *Applied Linguistics*, 7(2), 186-205.
- Wenden, A., & Rubin, J. (1987). *Learner strategies in language learning*. Prentice-Hall.
- Wenden, A. (1991). *Learner strategies for learner autonomy*. Prentice-Hall.
- Winnie, P. H., & Perry, N. E. (2000). Measuring self-regulated learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of Self-regulation* (pp. 531-566). Academic Press.
- Wong-Fillmore, L. (1979). Individual differences in second language acquisition. In C. J. Fillmore, D. Kempler, & W. S. Wang, (Eds.), *Individual differences in language ability and language behavior* (pp. 203-228). Academic Press.
- Zeidner, M., Boekaerts, M., & Pintrich, P. R. (2000). Self-regulation: Directions and challenges for future research. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 531-566). Academic Press.
- Zimmerman, B. J., & Risemberg, R. (1997). Self-regulatory dimensions of academic learning and motion. In G. D. Phye (Ed.), *Handbook of academic learning* (pp. 105-125). Academic Press.

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