

A Systematic Review of Carol A. Chapelle's 45-Year Contribution to Language Assessment and Education

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Abstract

The present systematic review examines Carol A. Chapelle's contributions to language assessment and education. The data include the review and analysis of all of her published research works (with some exceptions) relevant to language assessment, applied linguistics, and technology literacy from the 1980s to the present. To accomplish the objectives of the study, it was outlined and tackled in six sections including background, methodology, themes and overall achievements, exclusion and inclusion rules, systematic review and Carol Chapelle's personal reflection. First, in procedural terms, we struggled to access her all research works. Then, three macro-themes (Language Assessment, Applied Linguistics and Technology Literacy) and five micro-themes were derived from her whole research works. Next, a subjective methodology was developed for the purpose of the study, with reference to which some exclusion and inclusion rules were coined and then applied to the decision regarding the types of research works to review and analyze, i.e., journal articles, books and book chapters. After that, the systematic analysis was conducted and finally, Carol A. Chapelle provided her own personal discussion and reflection of this systematic review.

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¹ The Outline of the Study

Carol A. Chapelle's wide-spread academic contribution and personal perspiration have heralded the beginning of a big start and inspired a myriad of scholars, educators and language assessors across the globe. Her vast tripartite contribution could mainly serve as a major incentive for the authors (Ali Panahi and Hassan Mohebbi) to systematically review, and pay a tribute to the outstanding ELT and language assessment landscape she has generated for the upcoming generations. Therefore, to provide an academic account of the scholastic process through which Carol A. Chapelle came to contribute to language assessment, applied linguistics, and technology, we (the reviewers) conducted the study in six sections:

Section 1. Background

Section 2: Methodology for the Systematic Review

Section 3. Carol A. Chapelle's Themes and Overall Achievements

Section 4. Inclusion and Exclusion Rules

Section 5. The Systematic Review of Carol A. Chapelle's Research Works

Section 6. Carol Chapelle's Personal Discussion and Reflection

Section 1. Background

Catching a glimpse of the whole body of Carol A. Chapelle's research works traces the minds back to 1983, roughly 45 years ago, when Carol A. Chapelle presented her PhD thesis titled *The relationship between ambiguity tolerance and success in acquiring English as a second language in adult learners* (Chapelle, 1983). At the time, she appeared to be more persistent in her interest in the field. As such, she presented a paper in 1984 titled "Ambiguity tolerance and field independence as predictors of proficiency in English as a second language" at the 18th annual TESOL convention which was then published in *Language Learning Journal* (Chapelle & Roberts, 1986). Notwithstanding, no one could predict the future trend of her investigation and the main areas she would be potentially enthusiastic about; that is why we were keen on extracting the macro-themes of her research works. Neither could one foresee the amazing extent to which she has expanded her research domains, as her research areas and concerns are remarkable in qualitative and quantitative terms.

Along with exploring the relationship between ambiguity tolerance and success in SLA by adults, her studies on language assessment, in particular validity argument, appears to be a revolutionary perspective affecting ELT and language testing landscape. Revolutionary in the sense that she has laid strong foundations and provided justifications for understanding the fact that ELT does not exist in a vacuum, rather it emerges side-by-side with language assessment and technological growth. This deep link potentially provokes speculation over byzantine process she has travelled juxtaposing language teaching to language assessment, and the related sub-fields, such as validity

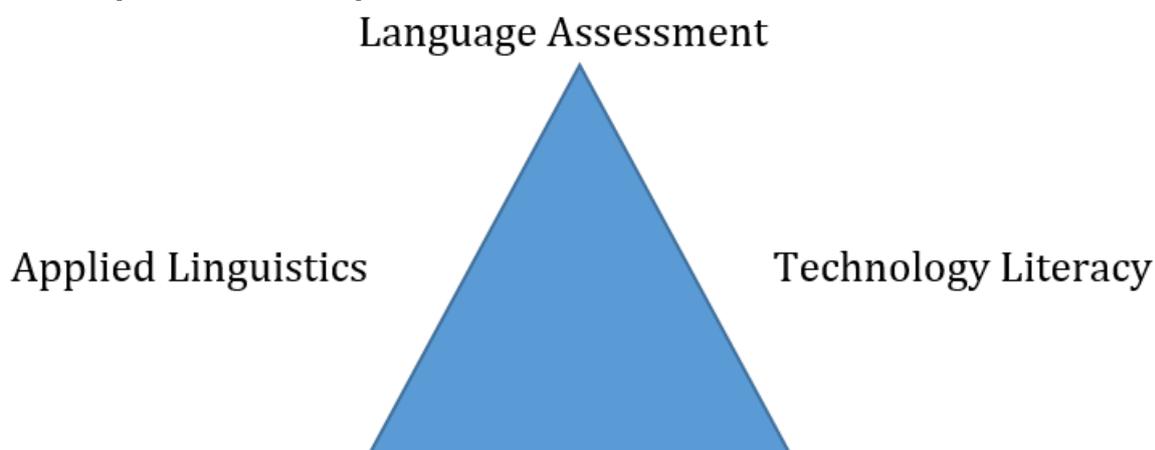
¹ This paper is part of a special issue (2025, 50-51) entitled: In honour of Carol A. Chapelle's contributions to language assessment and learning (edited by Christine Coombe, Tony Clark, and Hassan Mohebbi).

argument. More specifically, in a more recent interview by Meniado (2020), Carol A. Chapelle indicated that her own experience as a foreign language learner has led her to understand the struggles of foreign language learners.

We would intend to offer a brief orientation to her main areas of research as a point of departure and frame her whole research works into three categories: Language Assessment, Applied Linguistics (language learning, language teaching and TESOL), and Technology Literacy. The three are interconnected and interdependent and are mutually inclusive rather than exclusive. The reason why we pinpoint that the three categories are inclusive and interconnected rather than exclusive and irrelevant to each other is well-realized in her research works. For instance, she artistically and creatively connects language teaching and learning constructs to language assessment in her article titled "*Field independence: A source of language test variance?*" (Chapelle, 1988a). One of the components of the research topic for her PhD thesis was field independence, but she links the construct to language assessment. Throughout her whole research works, interconnection is highly visible with naked-eyes and this provides pedagogical and theoretical implications for researchers, educators and language testers. For ease of comprehension and to put her research works into a neat organization and order, we visually present her 45-year macro-themes in the tentative tripartite model below:

Figure 1

Carol Chapelle's 45-Year-Explored Macro-Themes



Technology Literacy

A look at the beginning history of her research dating back to 42 years ago indicates that, as with now, from the start of her research adventure, Carol Chapelle has attentively noted the leading role of technology in language learning and has striven to be technology literate. At a time when she presented her PhD dissertation on a quite separate issue, as mentioned before, she appeared to be insistent on conducting computer-based studies. For example, her research work titled "*Recognition of student input in computer-assisted language learning*" (Chapelle & Jamieson, 1983) is typical of her concern and enthusiasm for the role of technological findings in language learning and teaching. Therefore,

astonishingly, Artificial Intelligence (AI) which was selected as the word of the year 2024 by the University of Oxford is not something new to Carol Chapelle. By the same token, a look back at one of her research articles published 25 years ago (Chapelle, 1989a), Carol Chapelle indicates that research works in AI make appealing promises to educators wishing to transform pervasive computer technology into effective learning tools, as varying experimental systems using AI techniques have been coined for a number of subjects. This underlines the well-established reality and pedagogical implications that that in the whole body of her research works on assessment and applied linguistics, CALL issues have been more dominant. The pursuance of CALL issues and the promising hints and predictions she had made over the course of centuries have been the main impetus for helping her be updated with the trends of advancements in technology. This claim is exemplified, for example, in her more recently research work titled *Open generative AI changes a lot, but not everything* (Chapelle, 2024); it manifests the fact that she is scholastically capable to present the potential directions AI can pass down to the upcoming generations in addition to the paths charted by previous research. Generally viewed, the predecessors of today's AI and CALL researchers need to realize what open generative AI and CALL can display about the human and social dimensions of language use and their significance for language teaching, learning and assessment.

Language Assessment

One of the main areas into which Carol Chapelle has researched is language assessment. She has conducted plenty of studies on language testing, and the quality or acceptability of a test and the shift of meaning and scope of language assessment over the past years (Chapelle, 1999c, 2006b, 2011a, 2012d, 2012e, chapelle & Plakans, 2020). In particular, the 40th anniversary of language assessment in Annual Review of Applied Linguistics marks a significant uptick in research on language assessment, and envisages and predicts a promising scope for the future (Chapelle, 2020d, 2020e). To illustrate, one of the key concepts and terms for investigation by Carol A. Chapelle has been validity argument. Seldom can there be found a scholar or educator not being exposed to the exploration Carol Chapelle has made into the notion of validity argument, as she has alone or jointly published plenty of research works in the field of validity argument over the past 45 years. For example, two of her more remarkable books published on the issue are *Building a validity argument for the test of English as a foreign language* (Chapelle, Enright, & Jamieson, 2008) and *Validity argument in language testing: Case studies of validation research* (Chapelle & Voss, 2021a). More specifically, the former is more distinguished, due to its significance, novelty and innovativeness; SAGE, the Publisher of the Language Testing Journal, in conjunction with the International Language Testing Association (ILTA), sponsored a triennial award for it and nominated it as one of the best books in the area of language testing/assessment (Taylor & Wigglesworth, 2009). These all indicate that she has run varying contemporary discussions in the field, has discussed the what, how, and why of language assessment over the years, and attempted to develop a creative link between research in language assessment and second language acquisition. Vividly, the inference from the systematic analysis and the articles included

in reference section are typical of the centrality of her role in language assessment rendering her as one of the distinguished scholars in multiple fields, i.e., Language Assessment, Applied Linguistics and Technology Research.

Applied Linguistics

Carol Chapelle has delved more deeply into the realm of applied linguistics, underlined the instances of language-related problems and ameliorated social problems relevant to language. To characterize applied linguistics and put the theoretical justifications, findings and inferences into operational definitions, she has widely published on the issue. One of the fundamental materials and contents she has developed and published on the issue is *The encyclopedia of applied linguistics* (Chapelle, 2012a); serving as a reference book, it encompasses enormous domains of language problems addressed by applied linguists and portrays applied linguistics which engages with the crucially practical issues connected to real-world problems. By the same token, she has published a plethora of other research works on the issue of applied linguistics, language learning, language teaching and TESOL. For instance, some, too many to mention all here, of the published works are *My two problems in applied linguistics* (Chapelle, 2016i), *The concise encyclopedia of applied linguistics* (Chapelle, 2019a), and *Paths for exploring AI in applied linguistics* (Chapelle, Beckett, & Ranalli, 2024a, 2024b, 2024c). In the same vein, she has more noticeably integrated language teaching and learning into research area making an effort to offer theoretical solutions to real life problems tackled by applied linguists. Some, too many to cite all in this section, of the published works on technology in language learning and teaching from the 1980s to the present are Recognition of student input in computer-assisted language learning (Chapelle, & Jamieson, 1983b), *Field independence/dependence in second-language acquisition research* (Chapelle, & Green, 1992), *Innovative language learning: Achieving the vision* (Chapelle, 2001b), *Technology and second language learning: expanding methods and agendas* (Chapelle, 2004b), *Second language learning and online communication* (Chapelle, 2007d), *Technology-mediated language learning* (Chapelle, 2019b), *Technology integration in language learning and assessment: An interview with professor Carol A. Chapelle* (Meniado, 2020) and *Online fan practices and informal language learning: A lexical bundle analysis of YouTube comments from BTS videos* (Kim, Chapelle, & Sollier, 2024).

Overall, due to the dynamic essence of applied linguistics, the research works she has published are assumed to accommodate promising changes relevant to the three macro-themes (Table 1) including language assessment, applied linguistics, and technology and the potentially inferred micro-themes (Table 2) extracted from her all research works in the future.

Section 2: Methodology for the Systematic Review

In carrying out the review, varying phases were operationalized. In the first phase, to offer a neat organization to Carol Chapelle's widely-published research works, both

qualitatively and quantitatively, over her 45-year academic endeavor, we attempted, at the outset, to access all of her research works, but accessing all her research works was sort of unlikely as well as highly demanding as some were published when there existed no Google Scholar, so not clear where they have been archived. In the second phase, to clarify and envisage the impressionistic criteria and the method adopted for the review, we first searched Google scholar and her CV, printed the CV and provided the hard copy of the research works, and reflected over the contents of the research works for three primary purposes: First, on the ground of our reflection over the research works, a decision was made on the types of research works to be systematically reviewed, so taking account of the vastness, manageability and time factors as well as the guideline for the journal, we came up with an idea of including her articles, book chapters, and books in the systematic review process and decided to include and analyze them into three independent Tables (Table 5, Table 6 and Table 7). Then, with reference to the research works, we derived three macro-themes and five micro-themes, based on which Table 1 and Table 2 were coined. Next, based on the printed CV and hard copy of the research works, the systematic review was performed. One of the key requirements of the systematic review was making a decision as to what to exclude from the research works and what to include in the review. That is to say, as we were going through the review process, we developed the exclusion and inclusion rules and framed and portrayed them in Table 3 and Table 4. A point worth noting is that as we were attempting to put the research works in the reference section, we found out that, the publications of some of the research works dated back to four decades ago contained neither publication date nor the details and name of the journals in which they were published. Naturally, then, we excluded them from the systematic review, but we quantified and included them in her overall achievements.

During the review process, after coming up with a notion of reviewing and analyzing the types of research works, i.e., journal articles, books, and book chapters, we specified and detailed research works within the framework of five items in five separate and single standing columns (Table 5, Table 6 and Table 7):

1. *The name and date of the research works:* The research works and their publication date were indicated in a chorological order rather than in an alphabetical one.
2. *Main tenet:* We provided the main tenet of the published works as briefly as possible.
3. *Pedagogical Implications:* Among a plethora of predictable pedagogical implications (implicit or explicit ones), we inferred some for the classroom teachers, assuming that this would connect theory to practice. This would inspire the potential readers to speculate over the practicality of the research works and help them realize the fact that theory can possibly justify and advocate their teaching action in classroom context.

4. *Macro-themes*: We derived three main types of themes on subjective basis and titled them, Language Assessment, Applied Linguistics, and Technology Literacy (Table 1). Each one of the main themes could contain other varying themes, the manageability of which would appear to be beyond the space and time considerations of the current review. Therefore, we preferred to organize the themes in a way that could portray a full version of her contribution. For example, implicit in the macro-theme, “Applied Linguistics” is observed to also contain language learning, language teaching, and TEASOL, for instance. Other macro-themes have their own subcomponents, too.

5. *Micro-themes*: There were a vast number of micro-themes and topics investigated and to orientate them and put them in a neat manageable order required categorization. Therefore, we developed five categories and, accordingly, coined five micro-themes (Table 2). The micro-themes had their own varying sub-components. In particular, the fifth micro-theme included a vast number of topics and issues, i.e., minimum 28 areas, explored by Carol Chapelle. Hence, the sole way we assumed subjectively to group them all altogether was to name them “A Wide Range of Issues”. In the following section, Carol Chapelle’s themes and overall achievements are portrayed.

Section 3. Carol Chapelle’s Themes and Overall Achievements

In quantitative terms, the whole number of research works and overall achievements contributed by Carol Chapelle to the field, as tabulated from our online search and calculation, stood roughly at 200 items. Among these 200 research works, we found approximately 20 published books appearing to be world-recognized and frequently cited books. This number does not contain her published proceedings of conferences, guest editorials, test reviews, book reviews, posters, research works published in a language other than English, webinars, conference abstracts, published comments and notes, and inaccessible contributions of other types. Clearly, then, the mentioned number (200 items) is relatively an estimated number, so no claim is made as to its exactness. Carol Chapelle has widely contributed to the field qualitatively as visualized in the macro-themes and micro-themes (Table 1 and Table 2). The following section (Table 1, Table 2, Figure 2 and Figure 3) presents and details the themes: Macro-Themes and Micro-themes.

Table 1

Macro-Themes

-
1. Language assessment
 2. Applied linguistics (language learning, language teaching, TESOL)
 3. Technology literacy
-

Table 2

Micro-Themes

-
1. Validity (validity argument, validation)
 2. Reliability and language Skills (speaking, reading, writing, listening)
 3. Test types (e.g., diagnostic tests, placement tests, C-tests, computer-assisted tests, computer-adaptive testing)
 4. Online issues (AI, CALL, automated scoring, online education, PLATO IV system, computer-assisted instruction, etc.)
 5. Wide-ranges of issues (e.g., corpus analysis, statistical analysis, textbook, language lessons, NLP, educational materials, test review, teacher education, ergonomic theory, virtual environment, systemic functional linguistics, field-independence/ fiend-dependence, prototype-based issues, feedback, strategy issues, emotion, evidence-centered approach, ergonomic theory, language politics, multilingualism, cultural issues, images, ideology, encyclopedia review, Skills and subskills, intercultural competence, pragmatic competence, communicative competence, etc.).
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Figure 2

A Visual Representation of Carol Chapelle's Macro-Themes

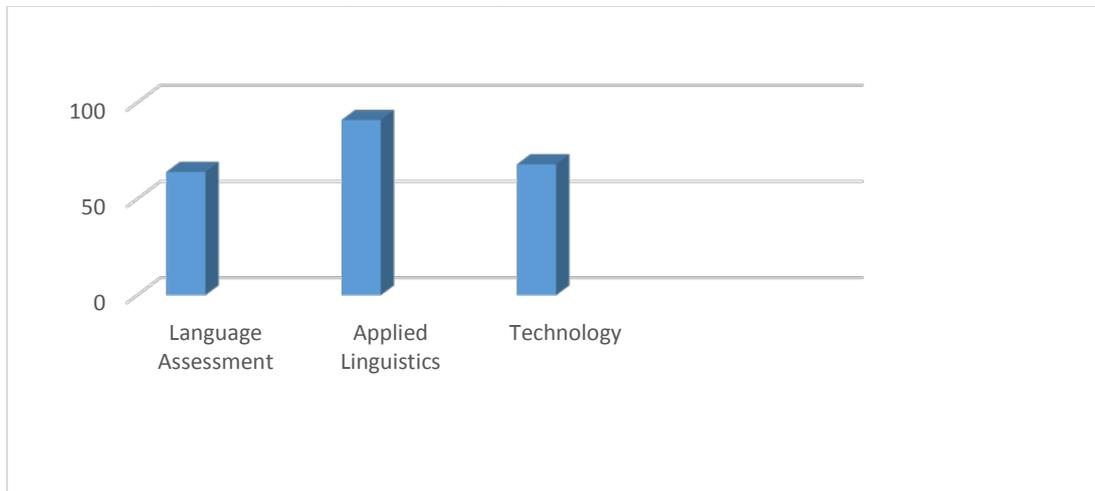
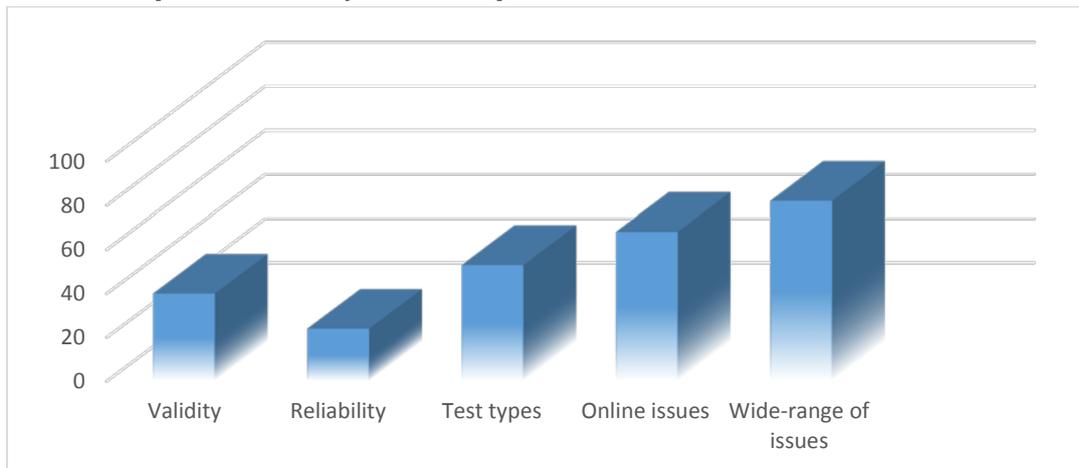


Figure 3

A Visual Representation of Carol Chapelle's Micro-Themes



Tables 1 and 2 and Figures 2 and 3 above indicate the depth, frequency and dominance of Carol Chapelle's research works. Table 1 illustrates three macro-themes extracted from her research works; all of these three individual macro-themes potentially contain other disciplines and sub-themes. In order to organize the vast number of macro-topics investigated by Carol Chapelle and render them manageable to analyze, we subjectively included them all into three independent items, however interrelated to other disciplines. Three macro-themes, serving as independent disciplines of their own type, have been dominantly investigated by Carol Chapelle. Since Carol Chapelle has provided applications and implications, either implicitly or explicitly, for all of her research works associated with the themes, to separate the three from each other would appear to be illogical, as beside assessment there seems also to be implicit an instructional variable. Moreover, according to the demands of the contemporary age, technology is highlighted in approximately most of her research works. Overall, to provide a numerical input and identify the approximate frequency of her research works based on our inference and subjective tabulation, the macro-themes including language assessment, applied linguistics and technology are estimated to stand at 64, 91 and 68, respectively. Although these numbers were rough and subjective estimation of the prevalence and frequency of the three macro-themes, more detailed enterprise and survey would yield some minor changes if explored and analyzed by other scholars.

As Table 2 and Figure 3 indicate, five micro-themes were extracted from the review of her whole research works. The fifth micro-theme (Table 3) seems to be more noticeable in terms of the dominance of investigation, as a quick look at its sub-components would yield approximately 28 other topics and areas investigated by Carol Chapelle. The other themes, such as the first one, i.e., validity, contain other related sub-components of their own: validity argument, validation process, etc. What we intended to achieve was to envisage a visual representation and the depth of her contributions regarding the macro-themes rather than providing an accurate numerical provision of the number of research works published by Carol Chapelle.

In terms of implications, offering an insightful perspective on the mentioned domains, i.e., macro-themes and micro-themes, can potentially help the readers enjoy reading Carol Chapelle's research works on applied linguistics (e.g., language teaching, language learning and TESOL), language assessment and technology literacy, hence the themes can potentially prompt researchers, educators and language assessors to reexamine, reconsider, rethink, and reinvestigate (if need be) the assumptions underlying various covered issues.

Section 4. Inclusion and Exclusion Rules

In this section, we first present the inclusion and exclusion rules (Table 3 and Table 4), based on which we removed some research work from the systematic review and decided what to include in the review.

Table 3*Inclusion Rules and Examples for the Systematic Review*

	Inclusion Rules	Example
1.	A publication was included in the systematic review if it belonged to one of the three categories subjectively decided to be analyzed: Journal articles, book chapters and books.	Chapelle (2019C)
2.	A publication related to micro-themes and macro-themes was included in the systematic review.	Chapelle (2020a)
3.	A publication was systematically reviewed if it contained a mix of the themes extracted for survey in this study.	Chapelle (2020f)
4.	The publications sharing commonalities in terms of content and the title were merged and analyzed together.	Chapelle (2007a, 2010b) Chapelle (2006c, 2006d)
5.	Although we excluded the short comments or short notes on specific issues, we included one of them being of higher pedagogical implications.	Chapelle (2007b)
6.	Carol Chapelle's publication was potentially included in the systematic review if it were easily accessible to the researchers for the systematic review.	Chapelle (1990) Chapelle (2024)
7.	All of the systematically analyzed research works were attempted to be included in the chronological order. However, in some occasions when more commonalities were observed in the main themes of the works, we failed to abide by the rule of putting them in a chronological order and we merged one into another. In this connection, one of her books was inaccessible, so we merged it into another research article (e.g., the book by chapelle et al. (2009a) was merged into Jamieson et al., 2004) and the related book chapter (Chapelle et al., 2009b) was also excluded from the analysis as it was mentioned in exclusion rules and examples for the systematic review, No.1, next table.	Chapelle (1995a, 1996a, 1996c, 2003c, 2005e, 2005f, 2007a, 2008b, 2010b, 2012e; 2014a, 2016g); Chapelle & Hegelheimer, 2004); Chapelle & Lee (2022a, 2022b)
8.	Some research works excluded from the study were included in her overall achievements and were also used for theme extraction purpose.	Chapelle (1988b); Chapelle & Jamieson (2002)
9.	We systematically analyzed her published booklets and included them in the section related to the Analysis of Books.	Chapelle, Grabe, & Berns (1997)
10.	Research works with different titles, but with the same main theme, were systematically analyzed in the same table.	Chapelle (2006c, 2006d)
11.	Although conference proceedings or other excluded short notes were excluded from the study due to space and time considerations, we included some of them due to our more interest in the research works in terms of pedagogical implications.	Chapelle (2004a, 2010d, 2011b, 2019c)
12.	We analyzed Carol A. Chapelle's PhD thesis in the section named Analysis of Books rather than the Analysis of Articles.	Chapelle (1983)
13.	If the research work could provide perspectives of the application of one (or some or all) of the themes, it was included in the systematic review.	Chapelle (2021)
14.	A publication was included in the systematic review even if published a couple of decades ago, as relevant to the main themes of the study.	Chapelle (1983)

Table 4*Exclusion Rules and Examples for the Systematic Review*

	Exclusion Rules	Example
1.	Book chapters appearing in books written or edited by Carol Chapelle or co-authors were all excluded from the systematic review. However, they were included in her overall achievements and were also included in the reference section. The primary reason for the exclusion of these chapters is traced back to time variables, and manageability and space considerations. Moreover, we assumed that the books we systematically analyzed would be in general a representative sample of key issues included in the book so that if one studied the book, would infer the main content of the book.	Chapelle (2003b, 2006b, 2008a, 2009b, 2012b, 2012c, 2012e, 2016b, 2016c, 2016d, 2016e, 2016f, 2017; Chapelle & Plakans, 2020); Chapelle, Baghestani et al. (2024); Chapelle, Chung, & Xu (2008b); Chapelle & Douglas (2006b); Chapelle, Enright, & Jamieson, (2008b); Chapelle & Sauro (2017b); Chapelle et al. (2024b, 2024c); Chapelle & Voss (2021b); Sauro & Chapelle (2017); Mislevy et al. (2008a, 2008b); Risager & Chapelle (2012)
2.	Interviews either published or unpublished were excluded from the study. However, they were included in the process of theme-extraction and in her overall achievements.	Saito & Ekiert (2005) Meniado (2020)
3.	Since we could not obtain access to the full version of some of her research works, we analyzed the intended works with reference to its abstract, or if we had access to, some did not have the related journal details. For example, we could not have access to the page number or other details for some research works. Therefore, we had to disobey the rule of APA style with some research works in reference section so that the related research work appeared, for example, with no page number.	Chapelle (2010c, 2010d, 2020)
4.	An article dealing with more political content and dominance, i.e., soft power or public diplomacy and its impact on French language teaching in the USA, was excluded from the study, as we could not infer any pertinent ideas concerning pedagogical implications.	Gagnon & Chapelle (2019)
5.	Research works of whatever kind not accessible and not tabulated from our online search were excluded from the study. However, they were included in his overall achievements and were factored in extracting the themes.	Chapelle & Jamieson (1989) Chapelle (2000b)
6.	All, too many to mention all, tributes, acknowledgements, newsletters, book notices, short notes (e.g., those in memorium), short comments, short reply to scholars' reaction, book reviews, article review contributions, varying academic and executive activities, editor's notes, editorials, editorial notes, the courses instructed, academic positions held, encyclopedia entries, proceedings volumes, non-refereed journals, conferences organized, dissertations reviewed, dissertations supervised, and professional memberships were all excluded from the study due to space, time and manageability considerations and despite their innovativeness, differences in subject, and high quality. However, they were only listed in Chapelle's overall achievement section.	Chapelle (1988b, 1999d, 2005a, 2009c, 2020e) Chapelle & Byrnes (2019) Chapelle. & Duff (2003) Chapelle & Jamieson (2002) Chapelle & Ockey (2024)

Section 5. The Systematic Review

A background, methodology, themes and overall achievements, and inclusion and exclusion rules were presented before. In this section, the systematic review is conducted

in a chronological order and in three parts including Analysis of the Articles, Analysis of the Book Chapters and Analysis of the Books (Table 5, Table 6 and Table 7). The review appears below.

Table 5*Analysis of the Articles*

Articles	Main Tenet	Pedagogical Implication	Macro-Themes	Micro-Themes
Chapelle, & Jamieson (1983a)	The study examines some of the techniques and lesson types that are used in foreign language courseware on the PLATO IV system. It details the PLATO IV system with respect to the techniques and lesson types and its integration into the curricula of language classes.	The study has multiple implications. The content of the article can potentially inspire and broaden the horizon of language assessors, educators and researchers to the effectiveness of foreign language courseware and the way computer-assisted instruction can pave the way for researching, assessing and educating reading, writing and listening.	2, 3	3, 4, 5
Chapelle & Jamieson (1983b)	The study presents issues on the types, recognition and use of student communication, or input. It details an overall perception of the potential of student-computer interaction in the light of CALL lessons and integrating it into the curriculum.	One of the main implications is that the power of computerized instruction and the contribution it makes to individualizing the lessons and contents of assessment can potentially provide acceptable consequential validity in terms of assessment and can lead to productive learning outcome in learning terms.	1, 2, 3	3, 4
Chapelle & Jamieson (1986a)	The article provides a brief review of courseware authoring systems, i.e., as software developed for instructional settings simplifying courseware development. Such systems contain two key elements of computer and lesson.	One of the main implications of the study is that providing learners with technological tools is not a sufficient criterion for the effectiveness of digital devices. Teachers should develop educational materials based on learners' needs and supply them with more efficient feedback.	2,3	3, 4
Chapelle & Jamieson (1986b)	The study explores the effectiveness of CALL in the acquisition of English as a second language in an intensive program. Also, it investigates student variables including, time spent using, attitude toward the CALL lessons and cognitive/affective characteristics.	There are varying implications for language assessors and educators. They need to realize the amount of time required for using CALL and also, they should analyze learners' needs, personality traits (cognitive or affective ones), their attitudes towards CALL and act accordingly.	1, 2, 3	3, 4
Chapelle & Roberts (1986)	The article explores the relationship between two learner characteristics including ambiguity tolerance (AT) and	One of the possible implications is that characteristics such as ambiguity tolerance, strategic competence and field independence	2	5

	field independence (FI), and adult learners' acquisition of ESL in the context of the USA with use of Multiple Regression. In this connection, Chapelle (1995a) is more informative, too.	are integral to L2 aptitude. Therefore, the way to develop them with reference to individual differences can lead to more lucrative learning outcome.		
Jamieson & Chapelle (1987)	The study reports on the findings resulting from collected data on 33 ESL students working with computerized dictation and spelling lessons. Three learning strategies are tackled, i.e., monitoring output, advance preparation, and monitoring input, all three are suggested be considered in concert with cognitive style.	There are varying implications for scholars. They are required to be conscious of the effectiveness of computer collection of strategy data so that the study can inspire them to reexamine and replicate the reliability of this method for examining strategies on different types of tasks and activities.	2, 3	2, 4, 5
Chapelle (1988a)	The article examines the relationship between field independence and language measures and reconsiders the extent to which field independence (other than language proficiency) one possible variable serving as a systematic error source in assessment process affecting language test scores.	There are numerous pedagogical implications. A potential one is that in developing the test content, test designers need to factor in the differential relationships of field independence with dictation, cloze and multiple-choice language tests. The scholars can possibly replicate the study in varying native/nonnative settings.	1, 2, 3	1, 3, 4, 5
Jamieson & Chapelle (1988)	This article presents five student characteristics significant for investigating computer materials. The characteristics, i.e., expectations, ability, age, affect and cognitive style, are described and their relevance for valid assessment of the effectiveness of courseware is exemplified.	The content of the study can help educators and scholars understand how CALL materials can be used more effectively in ESL/EFL classes. Additionally, they should consider the varying educational materials provided with use of an increasing variety of language courseware in the light of learners' cognitive styles and their individual differences.	1, 2, 3	3, 4, 5
Chapelle & Mizuno (1989)	A degree of learner-control is observed in most CALL activities, students' performance in such environments is under-researched. The study hence documents students' use of five strategies associated with learner-controlled CALL grammar lessons.	The study can have varying implications. When learners use learner-controlled software, they know how to direct their grammar learning, but teachers do not often realize what strategies they use. Therefore, teachers can infer such strategies with use of self-report protocol produced by learners.	2, 3	4, 5

Chapelle (1989)	This paper explores uses for intelligent courseware in the light of three types of intelligent systems in language classrooms. It presents the uses of these systems for the prewriting, drafting, and revising phases of writing instruction focusing on formal and functional aspects of the target language.	Studying the article can offer insights into practices in intelligent courseware. In general, it can help scholars and educators to pay careful attention to research and developments in AI, the psychological and linguistic aspects of language development, and research on current CALL practices.	2, 3	4, 5
Chapelle (1990)	The article provides a solution to varying problems with research on computer-assisted language learning (CALL) activities. Then, it proposes a discourse analysis of student-computer interaction viewing both as two participants in a dialogue. Therefore, she strives for the improvement of the internal and external validity of CALL research. In this relation, a research work by Heift and Chapelle (2013) and Chapelle (2016g) are similarly informative.	One of the possible implications of the study can be for Second language scholars. It can provide them with some impetus to use the intelligent courseware and assess the impact of a teaching method with reference to the individual differences of the language learners.	1, 2, 3	1, 3, 4, 5
Chapelle & Abraham (1990)	Cloze techniques can develop tests which assess aspects of students' second language competence, but how variations in the cloze procedure affect measurement is unclear. This study used four procedures including fixed-ratio, rational, (rational) multiple choice, and C-test and could to some extent shed light on the issue.	The study has implications for second language researchers and language test developers. Since differences in cloze methods has significant impact on their external relationships, they researchers can use CALL and replicate the study on the four procedures associated with cloze tests.	1, 2, 3	1, 3, 4, 5
Chapelle (1992); Chapelle & Green (1992)	This article is an evaluative reaction to Griffiths and Sheen's reappraisal of the SLA research in field independence/dependence (FI/D). They indicated that FI/D could not be relevant to second language learning. Similarly, Chapelle and Green (1992) reexamine the construct of FI/D and clarify its role in language testing.	The study can help researchers and educators notice the nuances in the main tenets of FI/D, as in this paper Carol Chapelle strives for providing additions to the research into FI/D that offers some effective insight into the issue.	1, 2	5

Abraham & Chapelle (1992)	The overall purpose of the article is to clarify what cloze tests measure in the light of cloze item difficulty and strives to make understandable the meaning of cloze tests and the abilities it requires (theoretical considerations) and the way to use appropriately the scores it yields (practical considerations).	One of the potential implications of the study is that it can provide a guideline for test development and use, so language testers and scholars in the field can use the article establish a much firmer theoretical basis for developing various types of cloze tests.	1	3
Hsu et al. (1993)	The article explores and distinguishes two types of computer-based learning environments, i.e., settings where students use software to facilitate active, exploratory learning: illocutionary and non-illocutionary learning environments: In the former, the computer interprets the intent of students but not in the latter.	There are implications for educators. Since the attitudes of language learners (towards computers, learning English, CALL, and the ESL software) who naturally explore computer-based learning environments, educators should value their attitudes and if need be, remove aside the related emotional filters.	2, 3	4, 5
Chapelle (1994a)	The article examines the effectiveness of the concept of genre, text and context, identifies similarities among the types of language produced in CALL activities and explores their functional elements and significant features.	Teachers and researchers can possibly analyze every single CALL activity and courseware produced educational materials with reference to the context and hence, use analytic methods for documenting the textual context in which interaction patters occur between learners and computer environment.	2, 3	4, 5
Chapelle (1994b)	The study uses measurement theory and investigates the essentials of validity justifications pertaining to the use of the C-test method, i.e., norm-referenced measures for proficiency and placement testing, for vocabulary assessment in L2 research.	Since the field of applied linguistics is faced with urgent need for practical testing and justifications and assessment of the performance of language learners, educators can potentially trust C-tests, test developers can develop C-tests with reference to the required construct and researchers can further investigate and replicate it in varying contexts.	1, 2	1, 3
Chapelle (1996b)	The study examines validity issues of computer-assisted strategy assessment (CASA) in SLA research. It uses two CASA studies, and provides an overview of metacognitive and cognitive strategies in the light of interactionist and trait-	There are numerous pedagogical implications for educators, researchers and language assessors. They can collaborate with each other in a way that they can mutually construct the type of learning environments which learners would employ for instructional	1, 2, 3	1, 3, 4, 5

	oriented approaches to the concept of strategy.	activities, then researchers and language assessors can collect the data for the purpose of computer-assisted strategy assessment and research.		
Chapelle (1996a, 1996c)	The articles detail crucial issues on the role of CALL in English as a second language. CALL is used for a variety of pedagogical objectives through numerous types of software and the way they function for the improvement of language skills and subskills enhancing communicative ability.	Nowadays, ELT seems to depend on the use of technology. Therefore, both language educators and scholars in the field of ELT should believe in the power of CALL and intelligent systems and take initiatives to develop their pedagogical knowledge base associated with digital tools.	2, 3	4, 5
Chapelle (1997)	The paper investigates L2 classroom learning activities for the purpose of providing guidance in framing CALL research questions in the light of cognitive psychology, constructivism, and psycholinguistics with emphasis on the interactionist approach and discourse analysis and hence, discovers relevant research methods.	There are implications for experienced and novice researchers. They can study the article and get inspired in the direction of developing research questions regarding CALL and effect it has on language learning, teaching and language assessment.	1, 2, 3	3, 4, 5
Chapelle (1998a, 1998b)	The article offers a suggestion regarding the design features and evaluation criteria for multimedia CALL. It recommends that such criteria be coined with reference to hypotheses about ideal conditions for SLA, such as focus on communication, input saliency, and opportunities for interaction. In this connection, another study (Chapelle, 1998a) focusing research on the value of intelligent CALL and computer-mediated interactions for language development in instructional activities is informative.	Educators should use intelligent courseware for developing the required input and educational materials and trigger them to needs, interest, and preferences of language learners. By the same token, the language learners should be provided with chances to interact with intelligent systems in a way that they will be capable to be exposed to a rich variety of written and auditory input. This will help them boost their performance.	2, 3	4, 5
Chapelle (1999c)	The article reviews and surveys the emerging view of validation and the assumptions about validity and the process of validation underlying the value	There are theoretical implications for researchers, language assessors and educators. The article can help them review the history of validity, validation and validity	1, 2	1, 3

	of a particular types of test (e.g., integrative, ", or performance), as they continue to impact research and practice in language assessment. Closely connected to this, a research work by Chapelle and Voss (2014) is informative.	argument issues, how to hypothesize about the testing outcome, get conscious of the way to operationalize testing theory into practice.		
Hegelheimer & Chapelle (2000)	The article is concerned with methodological issues involved in realizing CALL potential with an emphasis on examining the noticing hypothesis in CALL reading materials. It explores the challenges of assessing noticing in classroom and experimental settings.	The study has implications for researchers and language assessors. Studying the article can provide them with techniques for noticing, and it can also help them get familiar with varying types of assessment and the way they can reflect over and use CALL to measure the intended construct.	1, 2, 3	3, 4, 5
Chapelle (2001b, 2001c, 2014a)	The articles explore the effect as well as the challenges of technology, and the way SLA can be facilitated through the evolving role of technology and the virtual environment. They offer some guidelines for the future of technology in terms of developing learning and teaching tasks.	The article predicts the effectiveness of technology and offers some profound insight into the way CALL can dramatically affect the development of language skills and subskills in the direction of communicative competence.	2, 3	4,5
Read & Chapelle (2001)	The paper proposes a framework for vocabulary assessment with reference to the analysis of test purpose and the way test purpose can be connected to test design. To this end, three considerations from Messick's validation theory are factored in.	The study has implications for language test assessors. It can provide them with a solid guideline and an integrated framework for the way they can assess the lexical trait of their language learners for either placement purposes or for proficiency ones.	1, 2	1, 5
Chapelle, Jamieson & Hegelheimer (2003)	The article examines the factors contributing to the validation process of web-based ESL tests and investigates the varying was English as a second language test purpose is guided in terms of the validation process and validity argument.	The article can raise language scholars and assessors' awareness of varying pieces of evidence, rather than one single evidence, contributing to the test validity and use.	1, 3	1, 2, 4

Raby et al. (2003)	<p>The study deals with the notion of Ergonomics which is a unifying discipline describing men/machines (e.g., CALL) interactions. The article, in the main, presents ergonomic theory and practice through a research program conducted in a language center through reporting on two empirical studies illustrating an ergonomic procedure and introducing educational cognitive ergonomics.</p>	<p>The study can have potential implications for scholars working in the field of CALL and language education. It can help them understand the way to use ergonomic theory and practice and carry out qualitative and quantitative research, and use observations and experimentations, macroscopic and micro-genetic approaches.</p>	1, 2, 3	3, 4, 5
Chapelle (2003c); Chapelle & Hegelheimer (2004)	<p>The article surveys the role of technology in teacher education is surveyed and that English language teachers are invited to be aware of the link between technology, education and cultural issues, providing them with suitable guidelines for teachers, specifically Chapelle and Hegelheimer's (2004) work titled language teacher in the 21st century is more informative.</p>	<p>There are implications for teachers, pre-service teachers and teacher educators. They can educate language learners on online courses with use of varying platforms. They can also provide the trainees with live courses triggered for observations purposes.</p>	2, 3	3, 4, 5
Jamieson et al (2004)	<p>The study uses some criteria to evaluate the design of English as a second or foreign language (ESL/EFL) online courses and assessments and presents how a set of principles needed for potential operationalizations implemented as task features in CALL materials. Inrelation to evaluating and designing learning materials, Chapelle et al.'s (2009a) book is highly informative.</p>	<p>The study has varying implications for educators. It can possibly help them use CALL for researching second language acquisition, language testing, language pedagogy, curriculum development, syllabus design and developing pedagogical tasks.</p>	1, 2, 3	3, 4, 5
Chapelle (2004a)	<p>The study examines the potential of E-learning and its logistical benefits for learners and apparent financial incentives for institutions. To this end, the article uses varying ELT and assessment perspectives and examines whether students learn an L2 better through online</p>	<p>The study has main implications for educators and researchers. In using the findings resulting from online language education and online language assessment, they can refer to linguistic perspectives and use the prototypical resource for understanding the effectiveness of technology.</p>	1, 2, 3	3, 4, 5

	communication than they do in traditional classrooms.			
Chapelle (2004b)	This article expands on the incorporation of multimedia into applied linguistics research and agendas and focuses on individual differences, learner language, language learning and teaching, interaction, and linguistic analysis. Moreover, it presents the empirical and ethical challenges related to technology-based second language studies.	One of the primary implications is that the article invites scholars' attention to the issues surfacing at the intersection of technology and applied linguistics and highlights applied linguists' engagement with the technological aspects of their research contribution to the classroom context.	1, 2, 3	3, 4, 5
Jamieson, Chapelle, & Preiss (2005)	The study examines the evaluation of the overall appropriateness of CALL materials with the use of a case study approach and empirical data. It offers examples of a context-based criteria for CALL evaluation.	Teachers can possibly use the guidelines and examples presented in the article and the effectiveness of CALL use and decide to use CALL materials, either those relevant to assessment or instruction, at varying levels.	1, 2, 3	3, 4, 5
Chapelle (2005b)	The article provides practical hints in the light of research findings and more precisely indicates that the more the language learners receive linguistic input, the more enhanced and improved learning will be and that instructors need to help learners be conscious of the value of online assistance. Regarding the effectiveness of CALL, Chapelle (2005d) is also informative.	The study is rich with pedagogical hints. One of the implications is that CALL-relevant explicit instruction is more effective for learning grammar than implicit instruction and that teachers can help learners increase their pragmatic competence with use of CALL.	2, 3	4, 5
Chapelle (2005c)	The article first introduces CALICO which aims at better understanding and improvement of pedagogy drawing on technology. It reports on key issues on the "age of technology intersecting with the year of languages" and also details issues on the rights and responsibilities of CALICO members.	Varying implications can be extrapolated from the study. One of them is to make a deliberate effort to raise public awareness to the importance of technology in research and practice and its leading role in language educations and applied linguistics.	2, 3	4, 5

Chapelle (2006a)	The article surveys four software features providing individually tailored learning in tutorial CALL and presents some examples of work and explored issues. It eventually indicates that much more needs to be explored in order to support the next generation of autonomous learning and provide them with needed CALL materials.	The study can potentially help educators to consider needs-based approach for CALL-driven materials and identify the areas of individual needs, preferences and interests for language learners and provide them with tasks which can enhances their learning style.	1, 2, 3	3, 4, 5
Chapelle (2006c, 2006d)	The articles examine DIALANG which is a diagnostic language test in 14 European languages. The test provides learners with information about their strengths and weaknesses in a foreign language and accompanies the Common European Framework of Reference (CEFR).	The studies can possibly help classroom teachers and language assessors to develop tests which can provide accurate information regarding language learners' weak points and strong points and in the light of the features of their individual differences, their wants, needs, preferences and interests.	1	1, 2, 3
Chapelle (2007a, 2010b)	The papers deal with the evaluation of technology for language learning and considers the evaluation of innovation as (one of) the most significant challenge for teachers and curriculum developers.	One of the implications is to reflect over the way to help language testers to use validation approach for the interpretation and use of test results and also the way it assists the educators in coping with challenges associated with innovative tools.	1, 2, 3	1, 3, 4, 5
Chapelle (2007b)	The article reflects over the desire for linking theory and research to practice and attracts attention of scholars and educators to varying research works and to the sensitivity of TESOL Quarterly about practical matters (beside theory) over the course of 40 years.	The main implication of the article can possibly be for teachers and scholars. They should pay attention to the significance of a connection between theory and practice and consider more practical matters and pedagogical implications implicit in every research work.	2	5
Chapelle (2007c)	The study examines three areas of intersection between information and communication technology and SLA. In general, it describes the way computer technology provides learners with numerous alternative for language learning through interactive tasks delivered through communications software, CD-ROMs, and Web pages. For	One of the implications is for educators and scholars, curriculum developers and syllabus designers. The can potentially incorporate SLA into CALL design and evaluation and develop tasks of theoretically pedagogical value for classroom use.	2, 3	4, 5

	further study on technology and language learning, Chapelle (2010c) is also informative.			
Douglas & Hegelheimer (2007)	The study investigates the most recent ARAL survey on trends in computer-based second language assessment and explores developments in the use of technology in scoring, delivery and creation of language tests.	One of the implications of the study is for TOEFL iBT and IELTS trainers and candidates. The article can potentially raise their awareness of the automatic scoring and the use of ChatGPT in quantifying the performance of computer-based IELTS and TOEFL iBT candidates.	1, 2, 3	3, 4, 5
Pendar, Chapelle, & Pe (2008)	The article explored the use of the international corpus of learner English and surveys statistical analysis of large numbers of quantitative and lexical text features and identification of variation in learners' levels. The results revealed positive.	There are implications for researchers. They can possibly be invited to use exploratory study and incorporate a much larger number of variables and sample size in their study, as this might lead to more reliable result.	1,2	5
Chapelle (2009a)	The article examines a hidden curriculum in language teaching materials by tabulating the samples according to which Canada is mentioned in 14.4% and 17% of the units analyzed in the textbook and in the workbook, respectively.	There are implications for researchers. They can adopt the transnational perspective on culture and help language learners play a share in developing the materials and textbooks which can contribute to the country of their residence.	2, 3	4, 5
Chapelle (2009d)	The article compares the theoretical perspectives within view of ELT professionals in 1991 and that of today and indicates that CALL developers and researchers should not ignore SLA theoretical perspectives, i.e., cognitive linguistics, psycholinguistics, human learning and language in social context.	The study can potentially lead the researchers to the understanding that theoretical approaches can be efficient in the development and evaluation of CALL materials and tasks evaluation and development. This in turn can contribute to the nature of communicative competence and enhance the role of language for interaction purpose.	2, 3	4, 5
McCormick & Chapelle (2009)	The study surveyed the perspectives of students at a major American University with differing levels of Political Science and French classes to assess their knowledge of Canada. It tends to test the hypothesis that either the longer study in	One of the significant implications of the study is that educators and policy makers can assess students' attitudes towards learning about Canada, then, based on the information they obtain, they can integrate relevant topics into the curriculum.	2	5

	these disciplines increases their knowledge of Canada or not.			
Chapelle & Chung (2010)	The study examines the role of natural language processing and automatic speech recognition and processing technologies in language testing. In fact, it surveys and traces the root and history of NLP as an area of inquiry and practice and its effectiveness for language assessment.	The study can bear numerous types of implications. One of them is motivational so that reading the content of the article can inspire scholars to further investigate the role of NLP in language assessment and bring out the best pragmatic usage to the classroom teachers.	1, 2, 3	1, 2, 3, 4,5
Chapelle & Chung et al. (2010)	The study presents piloted test items used in a computer-scored test of productive grammatical ability in ESL. It offers a framework of grammatical features and outlines the interpretive argument and present results.	The implication is that the plausibility of moving forward with computer delivery and scoring is theory-based and plausible. So, the potential of assessing productive ESL grammatical ability in the specified areas of SLA research is emphasized.	1, 2, 3	1, 2 3, 4, 5
Chapelle, Enright, & Jamieson (2010)	This article evaluates the differences between Kane's argument-based approach to validity and the approach described in the 1999 in the light of drawing on experience between 2000 and 2007 in developing a validity argument for TOEFL.	One of the implications of the study is for researchers working in the field of IELTS. They can use varying pieces of evidence for researching and supporting the relative validity and use of IELTS for decision making.	1, 3	1, 2, 3, 4
Jamieson & Chapelle (2010)	The study is concerned with key issues in materials evaluation for applied linguists, teachers, materials developers, and students. It surveys and describes a project as an additional approach to CALL evaluation in varying contexts.	The study can have many potential implications, one of which can be attributed to published. They can underscore the need for empirical evaluation of materials and develop materials intended to have a much broader reach.	1, 2, 3	1, 2, 3, 4, 5
Chapelle (2010a)	This paper argues that CALL vertical spread, i.e., spread throughout language materials and curricula, makes it demanding to distinguish between CALL materials and other language materials. The study recommends some valuable lessons.	The implication is that ELT professionals and scholars can reflect over the content of the article and use the tips and opportunities to rethink and reconsider assumptions regarding accurate evaluation of materials in order to engage learners in language and culture learning.	2, 3	3, 4, 5
Chapelle (2010d)	The study adopted a qualitative approach and explored the intercultural competence of foreign language learners	One of the implications of the study is for language teachers. The article can help educators to raise the learners' awareness to	2	6, 5

	through examining Canadian cultural content of beginning-level French books used in the United States.	the possible link among varying cultures and mediate across cultures and critically analyze cultures. Also, educators can learners develop their own intercultural competence.		
Chapelle (2011b)	The article is concerned with the author's personal reflection over the various challenges an academic editor faces in the process of editing a scholastic encyclopedia as planned reference works in the field. The study presents issues which offer valuable insights unknown to many.	In their teaching, research, and outreach, the scholars in the field can find extremely useful expert reviews, views and perspectives accompanying, for example, "The Encyclopedia of Applied Linguistics". Studying it can possibly benefit them professionally and reveal some opportunity to take stock of the field.	2	5
McCormick & Chapelle (2011)	The article compares the results for a 2009 survey of Iowa State University students (non-Canadian Studies sample) with the 2010 survey of Loyola University (Canadian Studies sample) on their knowledge of Canada. In general, significant differences between these two groups on the overall survey results were observed.	There are implications for teachers and course content developers. The can provide learners with both knowledge of and interest in Canada, as this can avoid learners from being perplexed and frustrated and indifferent to living in Canada.	2	5
Chapelle (2012d)	The article elaborates on the way Kane's approach intersect with issues in language assessment and examines the argument-based framework involving two steps: specifying proposed score interpretations and uses in some detail and evaluating the overall plausibility of the intended interpretations and uses.	The study has varying implications for language assessment scholars. One of them is that for supporting or rejecting the effectiveness of a construct, numerous pieces of evidence should be collected, based on which an accurate decision can be made. The second is that in dealing with issues for language testing raised by Kane's approach, the renovation, rather than invention, of the issues should be factored in.	1	1
Chapelle & Heift (2013)	The current article examines the reliability and item analysis of the use of a measure for research on the field independent/dependent (FID) cognitive style and CALL use in addition to its relationship with learners' behaviors in the CALL program.	Language teachers can consider the effectiveness of (FID) cognitive style and develop martials which can intersect with learners' success and satisfaction and success in learning through CALL.	1, 2, 3	1, 2, 3, 4, 5

Grgurović et al. (2013)	The study conducted a meta-analysis on empirical research investigating language outcomes with use of thirty-seven studies following a search of literature from 1970 to 2006. It summarized years of research comparing pedagogies for second/foreign language teaching supported and unsupported with computer technology and pedagogy.	The study can potentially have varying implications for Language teachers and ELT researchers. The former can use technology-supported pedagogies and technologically driven tools to develop the performance of language learners, and the latter can conduct further meta-analysis and present the findings to the classroom teachers.	2, 3	4, 5
Chapelle (2014b)	The article examines Canadian and Québec content in a sample of 65 French textbooks in the USA over the course of 1960s-2010. An increasing trend was observed in Canadian and Québec content over the five-decade period.	Curriculum and materials developers and language educators can use Canadian and Québec contents and studies as an effective source and content for the teaching of French in the United States and use the relevant educational materials for pedagogical goals.	2	5
Chapelle, Cotos, & Lee (2015)	The study presents two examples presenting an argument-based approach to validation of diagnostic assessment using automated writing evaluation: 1. <i>Criterion</i> provides sentence-level error feedback and the <i>Intelligent Academic Discourse Evaluator</i> was developed to help students improve their discipline-specific writing.	Language assessors can use the findings in this study and apply the techniques and principles hidden in interpretive argument for automated writing evaluation and help language teachers use it for the purpose of diagnosing the weakness of their language learners' written performance.	1, 2, 3	1, 3, 4
Chapelle & Voss (2016)	The study surveys and reviews the research from the last two decades on the theme of technology and second language assessment and analyzes the research articles, review articles, documentaries, and book reviews associated with technology and language assessment and more details issues on technology for efficiency and innovation.	The study can serve as an effective source and as a basis for developing the pedagogical and theoretical knowledge base of language teachers and scholars, respectively. It can help them be pedagogy-wise and technology-literature.	1, 2, 3	3, 4, 5
Chapelle (2016h)	The study provides a summarized overview of the state of CALL in 1997 associated with an article titled "CALL in the year 2000: Still in search of research paradigms?" The comment presents the	Educators and applied linguists can use the efficiency and effectiveness underpinning the link between theory, practice and research in SLA and use technology for research into SLA	1, 2, 3	4, 5

Chapelle (2016i)	hidden value of research on second language learning for the study of CALL. The study presents an autobiographical account of Carol Chapelle's work and focuses the two problems she has worked on over the past thirty-five years in applied linguistics: how to use computer technologies to improve language teaching and learning and how to create the best language tests.	and for the improvement and development of technology for language learning. Reading the article can be beneficial for the academicians, as reading through the professional journal of world-recognized scholars can broaden their horizon of the realities of language assessment and SLA in the light of technological applications and implications.	1, 2, 3	1, 2, 3, 4, 5
Chapelle et al. (2018)	The study presents the implementation of an evidence-centered approach (ECA) for designing a prototype table-based learning-oriented assessment for English teachers and describes how ECA guides the design of tablet-based formative assessment tasks, and factors in the intended constructs to be measured and the learning that should be obtained from test taking.	The study can help language assessors and scholars to be cognizant of the way to go through processes required for developing a construct framework associated with the technology-mediated nature of language assessment and language use and the related consequences affordances.	1, 2, 3	1, 2, 3, 4, 5
Knoch & Chapelle (2018)	The study examines how issues relevant to the rating of test takers' linguistic performance can be treated within a validity argument framework using a manual search of published language testing research.	The study can help language assessors and language testing scholars realize how to develop a validity-argument based study on language testing issues in general and on international tests, such as TOEFL and IELTS on the other hand.	1	1
Chapelle (2020d)	The study reviews and presents findings in language assessment over the course of four decades. As such, it clearly provides a short overview of WH-questions relevant to language assessment, i.e., the what, how, why, where of language testing.	Since the study introduces ARAL articles to the potential readers, it can help novice researchers, experienced researchers and classroom teachers review the fundamental issues in language testing in a short period of time and within the framework of ARAL articles introduced to them.	1, 2, 3	1, 2, 3, 4, 5
Chapelle (2020f)	The article introduces Virtual Special Issues as a new resource for <i>Language Testing</i> readers, as the issues underscore fundamental trends and topics in the field and provide an overview of the previously	The study can inspire language testing scholars to further investigate the issues in the field and language teachers can also read the Virtual Special Issues to keep abreast of the	1, 2	1, 5

Chapelle (2020a)	<p>published articles which can contribute to the theoretical and pedagogical knowledge base of the teachers.</p> <p>The article constructs and presents a historiographical sketch associated with standard language hegemony in French language teaching in the USA. It analyzes the relevant primary and secondary sources, the artefacts produced by and for French language teachers in the USA, and presents research findings.</p>	<p>academic times and develop their assessment-relevant pedagogical knowledge base.</p> <p>The readers can read the article and enjoy Carol Capelle's personal experience in interacting with descendants of French Canadians in the United States and the way she illustrates the impact of standard language hegemony on French language teaching in the USA.</p>	2	4
Chapelle (2024)	<p>Carol Chapelle indicates that the present time for us as language professionals is to enhance our own profound engagement with language and language technologies in a world never so fascinated by language. Therefore, she presents three episodes which can make a significant contribution to vividly envisaging the technical accomplishments manifest as generative AI.</p>	<p>There are varying implications, too many to mention all, so it is left to the educators and scholars to read the present article as well as others in the reference section of this article. Therefore, they will admittedly react with a range of fascinating inferences and consequences and will assume a responsibility to think through the ethical, linguistic and social issues related to AI.</p>	2, 3	4
Kim, Chapelle & Sollier (2024)	<p>The article examines a lexical bundle analysis to identify and investigate structurally and functionally the frequently used word combinations in 8000 YouTube comments posted under South Korean music band BTS fan-edited videos and performance videos.</p>	<p>One of the primary implications is that watching YouTube and commenting in English language can develop language learners' general English proficiency both in terms of structure and in terms of developing their interpersonal competence.</p>	1, 2, 3	4, 5

Table 6*Analysis of the Book Chapters*

Book Chapters	Research	Practice	Macro-Themes	Micro-Themes
Chapelle, Jamieson, & Park (1996)	The study examines CALL research with respect to four traditions of second language classroom research. The four approaches include psychometric tradition, interaction analysis, discourse analysis and ethnographic approach. The study offers methodological advantages and disadvantages for CALL research, and highlight the future needs for instructed language learning.	The study has implications for researchers; the content of the study can inspire them to conduct process-oriented research questions, as such questions can explore the psychological process of language learning and develop productive outcome in communitive terms.	2, 3	4, 5
Chapelle (1999a)	The chapter explores critical testing concepts, such as test purpose, inference and construct definition and links the theoretical concerns to the computer-adaptive L2 testing issues and practices. As such, it connects theory and research in L2 reading to the development of computer-adaptive reading tests.	The chapters can be of use for language assessors and language testing course teachers. The content of the chapter can add to their pedagogical knowledge base regarding testing issues and the way the can construct a test.	1	1, 3
Chapelle (1999b)	The chapter considers language tests as SLA elicitation devices and examines SLA elicitation devices, i.e., effective for making inferences and extending them beyond the observed performance, from the perspective of two underlying principles including construct definition and validation.	The study can help data analysts working in the field of SLA. It can help them justify the inferences and use appropriate approaches for relying on varying, rather than a single, observation of performance and data for making potentially an accurate decision.	2	5
Chapelle (1999e)	The chapter presents the theoretical basis for authentic task and focuses on the significance of authenticity in a CALL task. As such, from her perspectives authentic classroom tasks are the tasks which resemble natural communication tasks outside class.	English language teachers and syllabus designers can use the specific issues and guidelines presented in the chapter and provide the language learners with the type of tasks required for communication outside class, whereby they can meet their academic and conversational needs.	2	5
Chapelle (2000a)	The chapter deals with a distinction between network-learning and pre-network CALL through discussing the type of empirically-based research and reviews recurring themes evident throughout the CALL literature.	There are implications for language teachers and educators. They can take account of individual-differences in using the findings of CALL and performing CALL-relevant techniques in the context of classroom.	2, 3	4, 5

Chapelle (2005e)	The chapter examines research on different types of second language learning activities for developing CALL research questions and for adopting relevant research methods with reference to CALL literature and in the light of diverse perspectives, such as cognitive psychology, constructivism, psycholinguistics, interactionist approach and discourse analysis. For further study on the issue of CALL, Chapelle (2005f, 2008b) can be potentially informative.	The study has implications for teachers, teacher trainer and syllabus designers. They can use the varying perspectives detailed in the study and design and develop CALL tasks and activities: this can contribute to enhancing learners' performance and develop t professional materials for teacher education programs.	2, 3	4, 5
Chapelle (2005g)	The study surveys the significance of interaction in second language learning and focus on the use of the concepts of interaction and interactivity and displaying the positive qualities of computer-assisted language learning.	The study can bear numerous implications. One of the implications is for teachers. They can possibly create a virtual environment through which language learners can interact with digital platforms, develop their communicative competence and meet their conversational needs.	2, 3	4, 5
Chapelle (2007d)	The chapter explores the potentials of e-learning outcome and its obvious logistical benefits for learners and its financial incentives for institutions. The recommendation is that e-learning affords opportunities for interaction and communication and provides more than access to information.	Teachers can use the article and reflect over the efficacy of e-learning tools through developing educational tasks and activities in the classroom, whereby inside the class communicative interaction can successfully get transferred to outside the class.	2, 3	5
Chapelle & Cardenas-Claros (2009)	The chapter surveys issues of definition and measurement of one cognitive style as a means of clarifying a research agenda, as understanding cognitive style in CALL and style-specific instructional strategies in practice can help individualizing practice.	The chapter helps educators accommodate for different styles with different language learners. Language teachers can accommodate learning styles, employ numerous instructional approaches and techniques and vary their activities and modes of presentation to individual differences of the learners.	2, 3	4, 5
Chapelle (2009b)	The study focuses on the issue of ESL/EFL teaching and testing driven by computer technology. That development in the field has cut across domains of language education including teaching methodology, materials development, language assessment, teacher education, program evaluation, classroom research, and diffusion of innovation is the general focus of the study.	The chapter can help teachers and scholars understand technology-related issues in further detail and construct innovative learning and assessment tasks, whereby they can potentially provide opportunities for learners to meet their	1, 2, 3	4, 5

Chapelle (2011a)	The chapter surveys validation in language assessment which is a process through which researchers develop evidence pertaining to test score meaning and appropriateness for making decisions. It starts with a historical background, elaborates on the praxis step in validation and presents a modern validity argument for TOEFL.	communicative needs within and beyond the classroom. The chapter can help scholars, policy makers and educators realize the position of validity argument in accurate decision making and provide clear formulas for practice and for developing and using a highly valid test.	1, 2	1, 2, 5
Chapelle (2016a)	Containing eight chapters, the book presents how foreign language textbook analysis can contribute to future EFL/ESL materials development and surveys the representations of Canada and Quebec in French beginner textbooks developed over the course of 1960-2010.	The book can potentially have varying implications. Since it tracks the trends in foreign language teaching and changes in Quebec's representation, it can be of interest to scholars of foreign language materials developers, syllabus designers, Canadian studies, Quebec studies and SLA.	2	5
Chapelle & Voss (2017)	The chapter overviews the past, present, and future of technology use and computer-assisted language testing. It examines wide-ranging issues such as computer-adaptive testing, transformational influences for language testing driven by technology, natural language-processing technologies, technology for delivering tests, the use of methods and findings from corpus linguistics, etc.	The chapter has implications for classroom teachers and scholars. It can help the teachers develop their own tests with use of technology and can inspire scholars to further investigate the use of technology in language assessment in varying settings.	1, 2, 3	3, 4, 5
Chapelle (2019b)	The study examines technology-mediated language learning and digital technologies which bring about multifaceted issues and opportunities for language learning. In fact, the chapter surveys the issues, practices, challenges, and findings associated with interaction in the classroom and in the online context.	The study can contribute to ELT-relevant educational systems so that it can help educators vividly comprehend the role of computer-assisted education and research in developing the domain of SLA, language assessment, and learner autonomy and motivation.	1, 2, 3	1, 2, 3, 4, 5
Chapelle (2019c)	The article examines the content requirements of technology-mediated pedagogies and indicates that professionals should recalibrate their content-related strategies for the selection, use and evaluation of content in language learning tasks in the light of CALL and technological tools.	Educators can use strategies required for connecting learners to the world of language learning and create opportunities for discovering the dynamic, content-rich pedagogy inherent to learning through technology.	2, 3	4, 5
Chapelle (2020c)	The study reports the findings of an investigation of linguistic landscape in images of Québec in 65 French textbooks over the	The study has implications for educators and materials developers. They can realize the significance of including	2	4

	course of 1960 to 2010. A total of 311 images were found with over half of these appearing in the decade beginning in 2000.	efficient and effective colorful images in conversation books and help EFL learners with pushed output.		
Chapelle, Kremmel & Brindley (2020)	The chapter explores fundamental issues in language assessment, and presents a detailed view of the notion of construct, test methods, validation, test analysis, language assessment, language testing, washback, alternative assessment, outcomes-based assessment, and language assessment literacy.	Educators can review and reconsider the fundamental concepts and practices and find out the connection between assessment and teaching in the classroom context.	1, 2	1, 2, 3, 5
Chapelle (2021)	The study reflects over the variety of perspectives to look to the future of language assessment and considers long-standing divisions in language testing portraying the “four skills language skills” typical of overall language proficiency.	Classroom teachers and language assessors can use the study and develop assessment tasks which can measure the communicative competence of language learners and help them meet their interactional needs.	1, 2	5
Chapelle et al. (2022)	The chapter examines validity argument associated with spoken and signed L2 assessment and reveals the significant resemblances in the basic validity issues observed in spoken and signed language assessment.	The study can have implications for language assessors; it can help them realize the principles and techniques inherent to validity argument framework and the processes to cover in order to validate sign language.	1	1
Chapelle & Lee (2022a, 2022b)	The studies examine the concept of validity and validation process playing a leading role a role in language testing research and provides a guideline for the concept of validation referring to the process of investigating whether test scores are appropriate for their intended purposes and uses.	Language assessors and language teachers can use the content of the research works and get acquainted with fundamental concepts in language testing, such as validity, validation, argument-based approach, and other key concepts which can provide them with some road map for decision making process.	1	1
Chapelle, Voss & Kim (2024)	This chapter surveys and reviews validation from a scholarly perspective and investigates validation issues in two main journals: Language Testing and Language Assessment Quarterly. It uses specified search terms and browses through the abstracts and titles of published articles in these two journals in two time periods: 2012 and 2023.	The chapter can be of potential usefulness for those interested in validity issues and validity argument. It can help them critically review the validity of journal articles in terms of test usefulness and in terms of replicating specific topics and conducting further research.	1	1

Table 7*Analysis of the Books*

Books	Main Tenet	Implications	Macro-Themes	Micro-Themes
Chapelle (1983)	The study examined the relationship between a personality characteristic, i.e., ambiguity tolerance, and success in acquiring ESL. Adult learners of varying cultural backgrounds were measured in terms of their ambiguity tolerance, motivational intensity, English class anxiety and attitude toward computer assisted instruction and past language experience.	The study has varying implications for researchers, and educators. It can possibly provide them pedagogical and theoretical impetus regarding the type of research questions associated with ambiguity tolerance and other key issues dominating the field in the past, as they reflect over the issues and reconsider and replicate them.	1, 2, 3	3, 5
Douglas & Chapelle (1993)	The book explores two umbrella issues, such as validity evidence, and tests of communicative language ability. It covers wide-ranging issues, such as the Cambridge and Educational Testing Service, judgements in testing, ESP and EAP testing, assessing language skills, computer-assisted testing, criterion-referenced testing, and diagnostic feedback model as well as many other key issues.	The book can be of possible use for researchers, language testers and educators. It can in part serve as a reference source for finding out research questions. Furthermore, it can be of theoretical efficiency for language testers and assessment-relevant course designers and course trainers.	1, 2, 3	1,2, 3,4, 5
Chapelle, Grabe, & Berns (1997)	The study examines a framework illustrating main issues relevant to language use in an academic context in the light of considering a broad range of validity issues. The framework, named the TOEFL Committee of Examiners model or COE Model, is comprised of aspects of the context of language use as well as hypothesized capacities of the language user.	The study can help language test developers, language assessment specialists, educators and TOEFL trainers to realize the infrastructure of TOEFL and be conscious of the validation process through which a relative extent of TOEFL reliability and validity has been evaluated. Moreover, assessment scholars can replicate the validation process of TOEFL in other settings.	1, 2	1, 2, 3
Chapelle (2001a)	This is the first single volume on computer applications in the field and covers issues in teaching, assessment, and SLA. Therefore, it explores computer applications in SLA by interpreting research and development in computer-assisted L2 learning, computer-assisted L2 assessment, and computer-assisted SLA research.	The book can possibly offer researchers, and educators a broader view of computer applications, as it deals with the historical foundations of CALL and its applications. Since it is much shorter, but innovative in connecting practice to theory, it can possibly be used as a part of course syllabus.	1, 2, 3	3, 4, 5

Chapelle (2003a)	The book focuses primarily on English language learning, explores implications for applied linguistics of recent developments in technologies used in second language teaching and assessment, language analysis, and language use and identifies significant areas of interplay between technology and applied linguistics.	The book can be used as a reference guide for finding out questions regarding applied linguistic issues and technology pedagogy and theory. Therefore, it can be of potential use for educators and researcher helping them investigate L2 tasks and assessment.	1, 2, 3	1, 2, 3, 4, 5
Stoynoff & Chapelle (2005)	The book covers a wide range of significant language testing issues, concepts and concerns in both practical and theoretical terms. In fact, it introduces the readers into the process of test, test development, test usefulness evaluation, validation issues and many other micro and macro domains.	The book can have varying implications. One of the implications of the book is for test users and classroom teachers. Since the book introduces them into varying tests and test development process and procedures, teachers can possibly enjoy designing and developing their own test for the classroom.	1	1, 2, 3
Jamieson & Chapelle (2006)	The book contains a comprehensive assessment package designed and developed for each level of the third edition of Focus on Grammar. The components of the package are varying tests such as placement, diagnostic, and achievement, general proficiency, and test-generating software.	Since the book integrates communicative and controlled practice with critical thinking activities and formative assessment, classroom teachers can use the book as a reference guide or course book and help their language learners practice English grammar through contextualized skills.	1, 2, 3	1, 2, 3, 4, 5
Chalhoub-Deville, Chapelle & Duff (2006)	The book discusses varying relevant issues such as test score variability, reliability and validity, inferences, dependability and generalizability in language testing, L2 vocabulary acquisition, contextualization, complexity, and credibility in applied linguistics research, verbal protocols, functional grammar, and ethnographic perspectives.	The book is a technical one and it can have implications for highly expert scholars in the field of language assessment. It can provide them with effective methods and approaches for obtaining insights into the way to interpret and analyze a specific construct or trait using evidential reasoning.	1, 2	1, 2, 3, 5
Chapelle & D. Douglas (2006a)	The book is mainly concerned with the theoretical, methodological and practical issues on language assessment through technology. It overviews the work in the field, provides examples of assessment through computer technology and offers practical guidelines for language teachers and researchers on how to perform assessment through computer.	Language assessors and scholars can use the book for test design and further research in the field, respectively. Teachers can use effective guidelines regarding the way to integrate technology into teaching, learning and assessment in classroom context, for example through using interactive tasks, i.e., computer-learner interaction	1, 2, 3	3, 4, 5

Chapelle & Jamieson (2008)	As a reference book containing companion CD-ROM, it introduces English language teachers to CALL, presents why and how to use CALL to teach language skills, subskills, and communication skills and links specific techniques for using CALL with contemporary CALL research.	The book can serve many pedagogical implications for teachers, researchers, teacher educators, and syllabus designers. The main point in this connection is to use the book as a course book and as an integral part of the syllabus.	2, 3	5
Chapelle, Enright, & Jamieson (2008a)	It contains nine chapters and covers a wide-ranging issue on language assessment in general and TOEFL in particular including test score interpretation and use, the evolution and frameworks of the TOEFL, task and language skills prototyping, test blueprint, final analysis and the TOEFL validity argument.	The book can be used as a reference guide for researchers, TOEFL test designers and developers, and TOEFL preparation course-trainers. Moreover, it can be of potential use for applied linguistics, professionals and graduate students in educational measurement, and anyone interested in assessment issues.	1, 2	1, 2, 3, 5
Chapelle, Chung, & Xu (2008a)	The book contains all of the articles presented at a conference held at Iowa State University on September 21 and 22 of 2007. Many distinguished scholars presented on varying topics, such as adaptive CALL and adaptive testing, (diagnostic) assessment, automated (speech) scoring, NLP, and many other issues in the field.	The book can develop a solid knowledge base for educators and experienced and novice researchers. They can study the book and replicate the studies and further investigate the explored areas in other settings.	1, 2, 3	1, 2, 3, 4, 5
Chapelle & Sauro (2017a)	<i>The book</i> provides a comprehensive investigation of the influence of technology on L2 through exploring four fundamental issues including language teaching and learning through technology; the technology-pedagogy interface; technology for L2 assessment; and research and development of technology for language learning.	The book can have varying potential implications. University instructors and professors can integrate the book into the main course syllabus and ELT scholars can use it for research purposes and for illustrating the effectiveness of technology in language education.	2, 3	4, 5
Chapelle (2012a, 2019a)	As reference books encompassing a much broader range of language-related issues, they contain entries on the fundamentals of the discipline and introduce readers to the concepts, research, and methods used by applied linguists working in the field.	As the names indicate, they are reference books which every professional in applied linguistics field need to have on the shelf, as they can potentially mediate between theory and practice and further develop the knowledge base of the readers of all relevant expertise.	1, 2	1, 2, 3, 5

Chapelle (2020b)	Containing 130 pages and 7 chapters, the book provides a brief and overall view of fundamental issues in validation research such as argument-based validity, validity argument design, uses and consequences of test scores, construct-related inferences, consistency-related inferences, content domain-related inferences and building a validity argument.	The book can initiate researchers and educators into the process of validation and the way argument-based validity can support, reject, weaken or strengthen the power of a test.	1	1
Chapelle & Voss (2021a)	This book introduces an argument-based validity framework with use of examples of validation studies. It illustrates how to design research, examine the validity of language test interpretation and use and highlights the intersection of argument-based validity with technology in language testing research.	The book can be used as a much-needed resource for language assessors, researchers, graduate students, post graduates, and practitioners interested in validity argument in language testing. It can help them comprehend the implications and intricacies of the argument-based approach to validation in language testing.	1, 3	1, 3, 4, 5
Chapelle et al. (2024a)	The book contains fifteen chapters on varying issues pertaining Artificial intelligence(AI) and the related theories and practices associated with ELT and applied linguistics. The book examines key topics such as AI tools, generative AI, and ChatGPT, and presents varying ways for applying them to language skills and test types, teacher development and many other issues.	The book can potentially have numerous applications and implications. It can help educators, scholars, language teachers, language assessors and teacher educators working in the field of applied linguistics. They can use the book and broaden their horizon of the technique and tips in the classroom context and conducting research on varying issues in the field.	1, 2, 3	1, 2, 3, 4, 5

Section 6. Discussion and Personal Reflection: Carol A. Chapelle

The copious presentation of my work by Ali Panahi and Hassan Mohebbi aptly display the varied and winding path of an applied linguist—simultaneously responding to practice-oriented problems and attempting to improve understanding of prospective solutions. I was gratified to see their interpretation of my work as supporting “the fact that ELT does not exist in a vacuum; rather it emerges side-by-side with language assessment and technological growth.” I would add to the ecology of ELT, the teaching, learning and assessment of languages other than English.

The guiding role of practice in my years of work means that finding coherence in the varied collection of topics that were discovered in the systematic review was undoubtedly a challenge, but a challenge well met in their finding of three broad areas to categorize my work: applied linguistics, language assessment, and technology. Applied linguistics, the study of real-world problems where language plays a central role, signals the importance of the language-oriented issues motivating my work. Applied linguists can see language-related issues to study wherever they look. My vantage point in higher education in the United States has presented me with more opportunities to study language-related problems than I could have possibly pursued, so timing, salience, and micro-level circumstances have also played a role. The combination of these factors drew me to technology and to language assessment.

My circumstances in higher education in 1977 were somewhat unique because I was teaching and studying at the University of Illinois at Urbana-Champaign, one of the few sites in the world that was experimenting with the use of digital technology for language learning. In the intensive English and world language courses, students were assigned to complete interactive lessons as part of the language curricula. As teachers in the intensive English program, the other teachers and I were not responsible for evaluating the computer-assisted language learning (CALL) materials, but there I met like-minded, Joan Jamieson. She was at least as interested as I was in the pedagogy, its use by students, and the possibilities it appeared to offer for language teaching and learning. We engaged in a number of investigations, presented at conferences, and wrote papers that explored digital technology for language learning. The timing was right.

None of our studies used an experimental design, dividing students randomly into two groups to send one group to the digital learning lab while the other remained in class for extra hours. Even if we had wanted to conduct such a study, we would have been unlikely to get approvals to do so because in this context the fact of the technology in the curriculum was not a question. The technology was already in place, the curriculum was in place, and in this context, the use of results from such a comparison study seemed highly unlikely. Instead, we investigated issues about the learners’ use of the technology, whether their linguistic and cultural backgrounds had an effect, what kind of error feedback they received, and what strategies they used, for example. In other words, we

wanted to discover new knowledge that could inform future materials and provide guidance for how teachers could help learners make the best use of them.

The need for teachers to understand the technology and their role in its use for language learning grew in the early 1980s. More and more language teachers and learners had access to a new generation of technologies as the first microcomputers put digital technologies within their reach. Technology use and the teachers' roles continued to evolve with the advent of word processing software, then local area networks, multimedia, and then the ultimate collection of language—the internet bringing the world of language and cultural materials to the classroom, connecting learners across geographical boundaries, and creating the conditions for social media, which proliferated on mobile technologies. The internet amassed the language needed to feed yet another consequential generation of language technologies. Generative artificial intelligence (GenAI), now in the hands of teachers and learners, has renewed the salience of the language-related issue at the intersection of technology and language learning.

Technology changes but the need to understand and evaluate its use for language learning remains. I contributed to addressing this need in two books: *Computer Applications in Second Language Acquisition: Foundations for Teaching, Testing and Research* (2001a; Cambridge University Press) and *English Language Learning and Technology: Lectures on Applied Linguistics in the Age of Information and Communication Technology* (2003a; John Benjamins Publishing). The value of the perspectives and guidance provided in these books is not captured in citation counts. Many of the readers, rather than writing academic articles, use my work to address issues such as developing learning materials, designing evaluations, and nurturing their identities as technology using language teachers. The feedback I receive from readers has maintained my motivation to pursue the goal of helping to navigate through today's technologies. Another book, *Technology and Language Learning* (forthcoming; Cambridge University Press), is coming soon. Like the previous two books, this one integrates assessment into the scope of topics covered.

My work in language assessment also began at the University of Illinois at Urbana-Champaign, where I learned in a course on language assessment of the need for a new language test in the ESL program. I stepped up. That was my first step, but I was to develop through more courses, my research, and again, the people I met along the way a deep appreciation of the role of measurement, testing, and assessment (by any name) in applied linguistics. It seemed to me at the time that applied linguists sensitive to needs in the field could not help but be drawn to issues in language assessment, as I was in 1978. The scores students receive on an English language tests can affect their life opportunities. The results of assessments in second language research are used to make claims about language learning. The content of tests used to gauge classroom achievement convey to students what is important. Tests for all of these purposes display

professional perspectives of what it means to know a language. Despite the obvious importance of assessment and testing, the professional expertise in applied linguistics did not seem to me to meet the challenge. The language testing project I was involved in in 1978 was to be the first of many.

Whether it is making decisions about students and their future or drawing conclusions from research on learning, some form of assessment plays a role. Therefore, the methods for defining what is measured and interpreting the assessment results are worthy of our attention and understanding. These are the methods of validation. They are built on an understanding of what measurement is and how a validity argument justifying interpretations can be formulated for a particular test use.

The salience of validity in assessment as a real-world language-related issue was at an all-time high for me several years before I began serving on one of the external committees for the TOEFL program at Educational Testing Service. My service evolved over years to the point where I was on the small team tasked with summarizing the validity evidence that had accumulated over the process of research and development of a new version of the TOEFL around 2005. Based on the existing literature, we constructed the validity argument for the TOEFL to present the years of research on the TOEFL in an edited volume, *Building a Validity Argument for the Test of English as a Foreign Language*, colloquially known as “the TOEFL book.” This book is picked up by many applied linguists wanting to increase the credibility, systematicity, and thoroughness of their validation work. I use it in my graduate seminar on validation in language assessment, where graduate students learn to create validity arguments for assessments that they develop, evaluate, or both. Some of these projects appear in the edited volume *Validity Argument in Language Testing: Case Studies of Argument-Based Validation research* (with E. Voss, 2021a; Cambridge University Press).

The edited volume was one of the two books prompted by the need I recognized in teaching the seminar and through communication with the many other developing researchers who wanted to learn how to create validity arguments for the testing projects that they were working on. The TOEFL book appeared to have aroused a vision of possibility among many language testers. It made the expression “validity argument” concrete evidence for clearly stated claims made about test interpretations and uses. It reported the theoretical and empirical research used to support claims, and it presented logical connections among the elements used to build a validity argument. Professionals in the field recognized that these were all desirable goals in validation, but the TOEFL book showed how it could be done. With respect to the needs for teaching validity argument, the TOEFL example is a starting point, but it became clear that a methodology book was needed. I published *Argument-Based Validation in Testing and Assessment* in 2021. The combination of examples in the case studies book and the methodological explanation in the argument-based validation book has increased my students’

understanding of validity argument and their ability to create their own validity arguments.

Contributing to students' understanding of applied linguistics is of course the core goal of my work. Recognizing their needs in view of their possible futures has helped shape my research path in the past and continues to as the field encounters multifaceted entanglements with generative artificial intelligence. In educating students, I perceive the salience of connections among areas of applied linguistics. Technology and language learning uses tools and concepts from language assessment. English language assessment and teaching contributes to assessment practices and critical perspectives relevant to other languages. The comparison of learning French as a foreign language and learning English as a foreign language offer a more revealing view of sociopolitical aspects of language learning than either one alone could. The conceptual and methodological connections multiply. They had to begin to be mapped, and one important result has been *The Encyclopedia of Applied Linguistics* (2012a; Wiley-Blackwell). Encyclopedia readers report that the ten-volume encyclopedia has helped them navigate and integrate the multifaceted field of applied linguistics. The second edition is expected to appear next year.

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