ABSTRACT

This paper presents a qualitative analysis of seven quantitative academic studies on two main concepts from Gary Chapman's five love languages theory, the foundation of “The 5 love languages of children”. These studies were selected from a literature review conducted in 2021 through the State of Knowledge methodology. The texts were analyzed using the Discursive Textual Analysis technique. This article aims to show what has been studied on Chapman’s theory outside Brazil. Three of the studies confirmed the empirical validity of each of the five love languages as proposed in Chapman’s thesis. Additionally, two academic works empirically validated the primary love language hypothesis. Findings indicate both of Chapman’s claims as empirically valid concepts through quantitative research. Results suggest that these principles in the realm of childhood could be meaningful to qualitative research – on education and teacher training – to improve both teaching and learning processes.

Keywords: five love languages of children; empirical study; discursive textual analysis.

RESUMO

Este trabalho apresenta uma análise qualitativa de sete estudos acadêmicos quantitativos de dois conceitos-chave propostos por Gary Chapman na teoria

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das cinco linguagens do amor, fundamentos de “As 5 linguagens do amor das crianças”. Esses estudos foram selecionados em revisão de literatura conduzida em 2021, do tipo Estado do Conhecimento, à luz da Análise Textual Discursiva. Objetiva-se apresentar o que tem sido estudado acerca da teoria de Chapman fora do Brasil. Três estudos confirmaram a validade empírica de cada uma das cinco linguagens do amor propostas por Chapman. Adicionalmente, dois trabalhos validaram empiricamente a hipótese da linguagem primária do amor. Os achados indicam ambas as hipóteses de Chapman como conceitos empiricamente válidos. Os resultados sugerem que esses princípios, na esfera da infância e adolescência, podem ser significativos para investigações qualitativas – em educação e para formação docente, com o intuito de enriquecer ambos os processos de ensino e aprendizagem.

Palavras-chave: cinco linguagens do amor das crianças; estudo empírico; análise textual discursiva.

Los 5 lenguajes del amor de los niños (Chapman; Campbell, 2017): ¿son sus dos conceptos claves empíricamente válidos para investigaciones cualitativas y para la formación docente?

RESUMEN
Este artículo presenta un análisis cualitativo de siete estudios académicos cuantitativos sobre los conceptos principales de la teoría de los cinco lenguajes del amor de Gary Chapman, base de “Los 5 lenguajes del amor de los niños”. Estos estudios fueron seleccionados de una revisión de la literatura realizada en 2021 tras la metodología del Estado del Conocimiento y analizados tras la técnica de Análisis Textual Discursivo. Este artículo objetivo presentar lo que se ha estudiado sobre la teoría de Chapman fuera de Brasil. Tres de los estudios confirmaron la validez empírica de cada uno de los cinco lenguajes del amor propuestos por Chapman. Además, dos trabajos académicos validaron empíricamente la hipótesis del lenguaje primario del amor. Los hallazgos indican que ambas afirmaciones de Chapman son conceptos empíricamente válidos y sugieren que estos principios en el ámbito de la infancia podrían ser significativos para la investigación cualitativa – en educación y formación docente para mejorar los procesos de enseñanza y aprendizaje.

Palabras clave: cinco lenguajes del amor de los niños; estudios empíricos; análisis textual discursivo.
INTRODUCTION

Contemporary research says that effective children's education – formal and informal – entails positive relationships and connections, mainly either between children/parents or students/teachers (Hattie, 2009; Dean et al., 2012; Klem; Connell, 2004; Rubin; Bukowski; Laursen, 2011; Boethel, 2004). Furthermore, while educating children, parents, and teachers must do it in a context of love, once love is a human need (Maslow, 1968; 1970). This means that meeting the children’s need for love is essential at home and at school. However, once the L-word has many meanings (Abbagnano, 2007), it could be difficult for teachers to either know how to or what concept of love may be used in the classroom setting.


Despite its popular discourse, echoes from authors like Claparède (1958) – teachers must love their students, Winnicott (1963) – the adult who deals with a child must do it in a facilitating and full of love setting, Wallon (2007) – a teenager is emotionally a two-year-old child, Piaget and Inhelder (2001) – children face different cognitive stages, and Maslow (1968; 1970) – every humankind is born with the love need; moreover, love is also necessary for teaching –, can be “heard” by formal educators while reading “The 5LLC”, since Chapman and Campbell (2017, p. 7) claim that “All aspects of a child’s development require a foundation of love”. It is worth explaining that when the authors mention “child”, they include teenagers – children in the final phase of childhood.

Apart from this, although “The 5LLC” is a book full of clear, concise, and practical information that may interest anyone who deals with children and teenagers worldwide – chapter 9 addresses learning and the 5LL, little is written on this subject, perhaps due to its non-scholarly discourse format.

However, the 5LL theory has been the subject of quantitative academic research since 2006 (Egbert; Polk, 2006). Furthermore, a study showed that school activities based on the 5LL theory helped to enhance adult students’ motivation (Murillo, 2017).
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These were the first relevant findings from the literature review of a master’s research completed in 2022 (Bohn, 2022), which had some of the 5LLC principles as its main theoretical foundation. The literature review followed the four steps of the State of Knowledge (SK) bibliographic research methodology – annotated, systematized, categorized, and propositional bibliography (Morosini; Nascimento; Nez, 2021), aiming to know about what has been studied regarding Chapman’s 5LL theory outside Brazil.

Thus, this work presents a description of a qualitative analysis of some quantitative empirical studies about two key hypotheses of Chapman’s 5LL theory: 1) there are five ways/behaviors (“languages”) to express love/feel loved (Words of Affirmation, Quality Time, Gifts, Acts of Service, and Physical Touch); and 2) everybody has a primary love language (PLL), which most fulfills his/her “love tank”. Although focusing on the marital relationship – partners need to enact conscious and specific behaviors to fill in each spouse’s “love tank” – a metaphor borrowed from Ross Campbell, Chapman (2006) claims that the PLL is learned in early childhood.

This work has three purposes, i. e., it intends: 1) to draw out some quantitative arguments that underscore “The 5LL” theory for both qualitative research and teachers; 2) to motivate qualitative research on the 5LL; and 3) to make teachers curious about the book, as well as to give theoretical support to those who have already read the book but did not put its suggestions in practice due to its non-scholarly discourse format.

Method

The literature review was done following the four stages of the State of Knowledge (SK) methodology, which entails

[...] identification, registration, categorization that comes to reflection, and synthesis on the scientific production of a given space of time, bringing together periodicals, theses, dissertations, and books on a specific topic (Morosini; Kolhs-Santos; Bittencourt, 2021, p. 23).

For this work, the SK is “understood as the search and analysis of scientific production in [...] articles [...]” outside Brazil, in order “to qualify this analytical construction with the aim of subsidizing research in a certain time and space” (Kohls-Santos; Morosini, 2021, p. 123). In other words, the SK helps the
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researcher to identify some of the scientific resources, either national or international, accumulated in his/her field of investigation.

First, for the annotated and the systematized bibliography steps of the SK, virtual searches were carried out on Google Scholar, in April 2021 using the term “the five love languages” without any limitations or filters. As a result, quantitative studies – most in the realm of psychology – were presented in order of relevance. From these, it was selected a sample of seven texts, starting with the four most highly ranked articles identified in the electronic database: Egbert and Polk (2006), Surijah and Septiarly (2016), Cook *et al.* (2013), and Surijah and Kirana (2020).

After a floating reading of their titles, abstracts, references, methodologies, and results, the fifth text was selected by utilizing the “quoted by” command within Egbert and Polk (2006) – a slide from a poster by Leaver and Green (2015). It is worth mentioning that this work was chosen due to its different research approach – not only using psychological measures, but also physiological ones.

The sixth text – the work by Polk and Egbert (2013) – was selected from the references of Surijah and Septiarly (2016) and Surijah and Kirana (2020). Further exploration using the “quoted by” command in Polk and Egbert (2013) led to the identification of the seventh text – now in the realm of education: an action-research project, conducted by Murillo (2017), which validated Chapman’s two hypotheses within the realm of formal education. Furthermore, as theoretical foundations, Murillo (2017) used “The 5LL”, “The 5LLC”, and a book by Chapman and Freed (2015) – “Discovering the 5 Love Languages at School” – “D5LL at School”, which curriculum is based both on educational connectedness research and on the 5LL theory.

For the categorized bibliography step of the SK, once the chosen texts were written following the American Psychological Association style (APA, 2020), it was decided to take advantage of the works’ sections to establish the *a priori* categories of the Discursive Textual Analysis (DTA): 1) abstract; 2) introduction; 3) method; 4) results; and 5) discussion. It is worth explaining that only the work by Leaver and Green (2015) does not have an abstract.

Then, the DTA corpus was reorganized in chronological order based on the publication dates of the following studies: 1) Egbert and Polk (2006); 2) Polk and Egbert (2013); 3) Cook *et al.* (2013); 4) Leaver and Green (2015); 5) Surijah and Septiarly (2016); 6) Murillo (2017); and 7) Surijah and Kirana (2020).
Next, it was conducted a qualitative exam of the texts using the DTA technique – a qualitative methodological path, developed by Roque Moraes, inserted “between the extremes of content analysis and discourse analysis, representing, unlike these, an interpretative movement of a hermeneutic nature” (Moraes; Galianzi, 2016, p. 13). It involves the phases of unitarization, categorization, description, and interpretation of data. Moraes (2003, p. 195) says that the “units of analysis” can come from a priori category, and once you have “the a priori categories, it is enough to separate the units according to these themes”. These categories are grouped in Chart 1, as follows.

<table>
<thead>
<tr>
<th>Study</th>
<th>Abstract</th>
<th>Introduction</th>
<th>Method</th>
<th>Results</th>
<th>Discussion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egbert; Polk (2006)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Polk; Egbert (2013)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Cook et al. (2013)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Leaver; Green (2015)</td>
<td></td>
<td></td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Surijah; Septiarly (2016)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>Surijah; Kirana (2020)</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

Source: chart built by the authors of this article (2024).

Finally, after the DTA, the fourth step of the SK came out – the propositional bibliography, which helped to organize the final text, as well as to guide the inferences of the State of Knowledge bibliographic research.

Abstract Category

In Speaking the Language of Relational Maintenance: A Validity Test of Chapman's Five Love Languages (1992), Egbert and Polk (2006) examined Chapman's theory on “The Five Love Languages: How to Express a Loving Commitment to Your Spouse”, using confirmatory factor analysis (CFA). The results showed relevant connections between the LL factors and the relational maintenance typology of Stafford et al., suggesting that Chapman's LLs can be translated into behaviors that aim to promote relational maintenance.
In Speaking the Language of Love: On Whether Chapman's (1992) Claims Stand Up to Empirical Tests, Polk and Egbert (2013) reexamined Chapman’s 5LL theory – focusing on testing Chapman’s hypothesis – spouses who speak each other’s preferred LL experience high relational quality, as opposed to spouses who do not observe this practice. Couples reported receiving preferences and tendencies to express love through the 5LL, and completed an instrument that measures relational quality. The descriptive results showed different potential combinations of couples in terms of feelings and preferred LL, suggesting that a small number of couples meet the criteria proposed by Chapman for greater relational quality.

In Construct validation of the five love languages, Cook et al. (2013) reported the factorial structure of a new scale regarding Chapman's 5LL. The study assessed preferences for statements containing theorized behaviors that show 5LL. Even though the scale achieved high internal consistency, the CFA generated five LL factors that were not representative of Chapman's LLs. Thus, Cook et al. (2013, p. 50) suggested future investigations, regarding “the utility of the love languages in benefiting emotional and interpersonal relationship dynamics”, as well as “further exploration of the love languages as valid constructs”.

The relevant aspects of the poster Psychophysiology and the five love languages, by Leaver and Green (2015), which does not have an abstract, are detailed in the “Introduction” Category subsection.

In Construct validation of the five love languages, Surijah and Septiarly (2016) constructed a Likert-type scale with the aim of validating the 5LL. The CFA supported the five factors initially proposed by Chapman.

In Chapman’s ‘Languages of Love’ as a tool to increase students’ intrinsic motivation in the classroom environment, Murillo (2017) conducted action research with college students. Aiming to discover whether the students' love languages have an impact on the promotion of intrinsic motivation in the classroom context, each participant answered a questionnaire (to know their PLL), a pre- and a post - intervention intrinsic motivation test (IMT). The results showed an increase in the students’ intrinsic motivation, as a result of the teacher’s practice – fulfilled the students’ needs, in the classroom context, using the principles of the PLL with each student. Murillo's action plan provided steps and guidelines to foster the students’ intrinsic motivation through the principles of the 5LL theory.

In Factor Analysis of the Five Love Languages Scale, Surijah and Kirana
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(2020) reexamined the component factors of the 5LL, as previous studies have shown different results. The 5LL were measured by adjusting the 5LL Scale. Exploratory factor analysis (EFA) showed that the love language has four components. The only finding was the “sacrificial” element.

Introduction Category

Egbert and Polk (2006, p. 19) explained that “The 5LL is the book where Chapman presented his two central hypotheses: 1) people “speak” 5LL: Words of Affirmation (WA), Quality Time (QT), Gifts, Acts of Service (AS), and Physical Touch (PT); and 2) “people tend to have one or two favorite LLs and often show love to their partners by using their own preferred LLs”, but “partners who enjoy higher quality relationships tend to express love according to LLs other’s favorites”. That said, Egbert and Polk (2006, p. 19) pointed out that “although they do not refer directly to relational maintenance, all these statements have a remarkable similarity with the academic literature” on this topic. So, aiming to investigate the empirical validity of the 5LL, Egbert and Polk (2006, p. 19) stated two research questions: 1) “Do Chapman's 5LL form five distinct and cohesive factors?”; and 2) “What is the relationship between Chapman's 5LL and more established measures of relational maintenance?”.

Based on what authors Dindia and Canary published in 1993, Egbert and Polk (2006, p. 20) explained that “relational maintenance refers to behaviors adopted to preserve the desired relational characteristics”. In addition, anchored in Canary and Stafford’s studies published in 1991 and 1992, the authors said that “the use of these behaviors has been linked to fairness, love, satisfaction, and commitment.” Egbert and Polk (2006, p. 20) explained that, in 2000, Stafford et al. “confirmed the validity of the five behaviors of Canary and Stafford”.

Concerning the work by Polk and Egbert (2013, p. 1), the authors focused on two objectives: 1) to test three new Love Language Scales (LLS), constructed and adjusted by the authors based on Egbert and Polk (2006); and 2) to test Chapman’s idea, "that couples where partners tend to give love [...] with their partner's preferred LL [...] enjoy higher quality relationships." Thus, Polk and Egbert (2013, p. 2) stated five research questions – two of them are worth mentioning here: 1) “Does a relationship exist between a partner’s forced-choice feel love language and the means associated with their own feel LLS subscores?”; and 2) “Does a relationship exist between a partner’s forced-choice feel love language preference with their partner's tendency to
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give LLS subscores?.

The article by Cook et al. (2013, p. 50) was anchored in ample empirical evidence “that there are probably styles of love composed of emotional, cognitive, and behavioral patterns”, as well as that “these love styles or languages can offer insights into the needs and meaning of specific actions for others [...]”. However, regarding Chapman’s 5LL theory, Cook et al. (2013, p. 51) pointed out that “the current scientific literature on Chapman’s love languages is limited to a single study published in a communication journal (Egbert; Polk, 2006)”. Thus, Cook et al. (2013, p. 51) aimed “to explore whether the love languages […] can be reliably demonstrated and measured by means of a new instrument”.

In the poster by Leaver and Green (2015, p. 1), the authors classified their study as an attempt to “expand the validation of Chapman's relationship theory, using measures of the autonomic nervous system (ANS)”, from the hypothesis that “if individuals do exhibit preference for an identifiable [...] (LL)”, this indicates that “these preferences would be evident in changes observed in the ANS when presented with imagery related to the preferred LL”, having Egbert and Polk (2006) as a theoretical reference, due to Chapman’s 5LL theory – although popular with the general public, remained “tangential in academic circles”. To measure changes in the ANS, the authors used psychophysiological measures – the heart rate, skin conductance and the respiratory rate.

Regarding the article by Surijah and Septiarly (2016, p. 65), the authors stated that “Chapman [...] offers his vision on love”, but pointed out that “further research and construct validation tests are needed to support the theory”. As previous studies, the authors cited Egbert and Polk (2006), Polk and Egbert (2013), and Cook et al. (2013). Surijah and Septiarly (2016, p. 66) explained that this new study “aimed to test the construct validity of the 5LL scale using factor analysis in Indonesia”, and that they constructed a new instrument to include the element “context” in the 5LLS.

In Murillo’s text (2017, p. 1), the author compared teachers to “students' second parents when they are at school”, and that some problems which occur in the family environment “also happen inside the classroom”. Thus, believing that conflicts may derive from a not being loved/being important feeling that some students have, Murillo (2017, p. 2) revealed that her study “proposed the principle of filling in the students' love tank in an environment classroom, which serves as their second home” – i.e., since “students’ educational journey is longer now compared to before”, the classroom “is the best time for university
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educators to focus more on the intrinsic motivation rather than on the extrinsic motivation”. Thus, Murillo’s (2017, p. 3) focus was on “how to achieve intrinsic motivation through the use of Chapman’s LLs”. As theoretical foundations, the author cited three books by Chapman – “The 5LL”, “The 5LLC” and “D5LL at School” –, the works of Polk and Egbert (2013), and of Surijah and Septiarly (2016). To conduct her study, the author proposed four research questions: (a) what each student’s predominant LL was; (b) what the students’ scores on the pre and post Intrinsic Motivation Test (IMT) were; (c) what the difference between the pre and the post IMT results was; and (d) what plan of action could be used to foster students’ intrinsic motivation based on the principles of LLs.

Concerning Surijah and Kirana (2020, p. 56), the authors used the assertion made by Sailor in 2013 – that it is necessary for partners to make conscious efforts to prevent the fading of conjugal love, pointing out that one “of the efforts to be considered concerns the theory of 5LL by Chapman”. However, Surijah and Kirana (2020, p. 57) pointed out that Louie, in 2014, criticized “Chapman’s conception in the Asian cultural context, suggesting that giving gifts in Asian families can be interpreted as ‘buying' affection”, and that “physical touch for Asians is still considered taboo”. Thus, Surijah and Kirana (2020, p. 57) claimed that this criticism led them “to challenge the validity of the universality of the concept of love languages, especially in the Asian context”. As a literature review, the authors cited Egbert and Polk (2006), Polk and Egbert (2013), Cook et al. (2013), and Surijah and Septiarly (2016).

Method Category

Extra data are addressed here in addition to those mentioned in the “Abstract” category and grouped in Chart 2 displayed at the end of this subsection, excepting the work by Leaver and Green (2015) – which did not have an abstract –, and the one by Murillo (2017) – who did not build a Likert-type scale.

Concerning the study by Egbert and Polk (2006, p. 22), the authors constructed the LL Scale (LLS). From this LLS, Polk and Egbert (2013) constructed three new scales: (a) an LLS (forced-choice responses); and (b) two new versions of LLS, one for “feeling loved”, and another for “tendency to express love”.

For the study by Cook et al. (2013, p. 53), the authors constructed a questionnaire for two studies regarding the 5LL, and the sample completed “online screening packets. Data were collected via SurveyMonkey.com,
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downloaded in Excel format”.

For the poster – held in the US, Leaver and Green (2015) recruited 89 participants to: 1) respond to Chapman’s 5LL questionnaire; and 2) be submitted to recordings of psychophysiological responses – regarding skin conductance, breathing rate and pulse rate – while listening to “recorded guided imagery scripts that represented one of the love languages described by Chapman”, through two imaging techniques – imaginary exposure and guided imagery. According to the authors, the “picture scripts were designed to combine elements of both techniques to place participants in convincing LL scenarios”, and that

Participants listened to progressive muscle relaxation followed by the 5 imagery scripts with deep breathing between each script. The scripts were randomized. A composite score combining all three physiological measures was calculated [...]. The composite score and individual physiological measures were used as dependent variables in the data analysis. All values are an average of doubly subtracted baseline difference scores (Leaver; Green, 2015, p. 1).

Concerning the study by Surijah and Septiarly (2016, p. 67), the authors constructed the 5LL Scale (5LLS), explaining that

In the original version, Chapman introduced an ipsative scale for FLL. It has 40 paired items in which individuals were forced to choose one statement from each pair. However, an ipsative scale has disadvantages particularly when data are analysed with factor analysis.

Englert (2010) stated that data obtained using an ipsative scale could not be analyzed thoroughly with factor analysis. An ipsative scale had also consistently showed a lower reliability compared to a normative scale.

Factor analysis is highly dependent on overall weight of each variable (Saville & Willson, 1991). Therefore, data generated from a normative scale (such as a Likert scale) is expected to meet the characteristic of factor analysis as opposed to an ipsative scale. This shows why recent studies (Egbert & Polk, 2006; Cook et al., 2013; and Polk & Egbert, 2013) on love languages used Likert scale instead of Chapman’s ipsative scale.

This means that using a Likert scale (four or more options to choose as an answer), the researcher transformed a qualitative item into a quantitative
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item.

For the study by Murillo (2017) – held in the Philippines, the author submitted 30 participants to a Classroom Intervention Program (CIP), following the Classroom Action Research (CAR) design proposed by Mettetal in 2012, and using Chapman’s 5LL as a manipulation to foster students’ intrinsic motivation inside the classroom. The null hypothesis was tested through pre and post-test. Data collection took place through two instruments constructed by the researcher: 1) a test – adapted from Chapman’s 5LL test; and 2) a pre and post Intrinsic Motivation Test (IMT) – adapted from the Intrinsic Motivation Inventory (IMI), anchored in the Self-Determination Theory proposed by Deci and Ryan in 2000. From the results of the 5LL test and the pre IMT, Murillo (2017) implemented a three-month CIP. After that time, the researcher submitted the students to the post IMT to check if there was an increase in intrinsic motivation. For data analysis – pre and post IMT, Murillo (2017) used a one-tailed data “t” test with a significance level of 0.05.

For the study by Surijah and Kirana (2020), the authors constructed a new 5LLS – 21 items (20 from the LLS by Polk and Egbert (2013), translated into Indonesian).

Next, Chart 2 shows extra information from authors who constructed new scales Likert-type.

**Chart 2: Love Languages Scale (LLS) constructed based on Chapman**

<table>
<thead>
<tr>
<th>Love Languages Scale (LLS) constructed based on CHAPMAN (1992; 2010)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Egbert; Polk (2006)</strong></td>
</tr>
<tr>
<td>Place</td>
</tr>
<tr>
<td>Participants</td>
</tr>
<tr>
<td>Scale types</td>
</tr>
</tbody>
</table>
The 5 Love Languages of Children (Chapman; Campbell, 2017): are its two main principles academically valid for qualitative research and teacher training?

<table>
<thead>
<tr>
<th>Methodology to construct the LLS</th>
<th>Egbert and Polk (2006) (Likert)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5LL Chapman’s theory (1992; 2010) / Scale type: questionnaire (list of behaviors; either Likert-type (5 points) or forced-choice response options)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Items</th>
<th>20</th>
<th>20</th>
<th>36</th>
<th>34</th>
<th>21</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>General Objective of the LLS</th>
<th>To test the factorial structure of the built scales, by Confirmatory Factor Analysis (CFA) and/or by Exploratory Factor Analysis (EFA)</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>Scale test type (software)</th>
<th>CFA (AMOS 5.0)</th>
<th>CFA (AMOS 20.0)</th>
<th>CFA (SPSS 19)</th>
<th>CFA (SPSS 16.0)</th>
<th>CFA / EFA (AMOS) / (SPSS 20.0)</th>
</tr>
</thead>
</table>

Source: chart built by the authors of this article (2024).

In addition to this, is worth explaining that these authors used the value of the Cronbach's alpha (α) to verify the level of reliability of the items. The range of the Cronbach's alpha scores are displayed by Ahdika (2017, p. 178), as shown in Table 1.

### Table 1 – Cronbach's alpha level of reliability

<table>
<thead>
<tr>
<th>Cronbach’s Alpha Score (α)</th>
<th>Level of Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.0 – 0.20</td>
<td>Less Reliable</td>
</tr>
<tr>
<td>&gt;0.20 – 0.40</td>
<td>Rather Reliable</td>
</tr>
<tr>
<td>&gt;0.40 – 0.60</td>
<td>Quite Reliable</td>
</tr>
<tr>
<td>&gt;0.60 – 0.80</td>
<td>Reliable</td>
</tr>
<tr>
<td>&gt;0.80 – 1.00</td>
<td>Very Reliable</td>
</tr>
</tbody>
</table>

Source: Adapted from Ahdika (2017, p. 178) by the authors of this article (2024).

Regarding why data were analyzed using factor analysis, authors Krech and Crutchfield (1978, p. 237) explain that it is “a statistical method that permits dealing with a great number of correlations, simultaneously”, aiming to “determine the number of the necessary ‘factors’ to explain the intercorrelations among the results of different tests”.

Results Category
The 5 Love Languages of Children (Chapman; Campbell, 2017): are its two main principles academically valid for qualitative research and teacher training?

Additional information not included in the “Abstract” category is addressed here.

Regarding the work by Egbert and Polk (2006), Cronbach's alphas (α) of 0.77 (Physical Touch), 0.80 (Quality Time), 0.81 (Words of Affirmation), 0.83 (Gifts) and 0.85 (Acts of Service) revealed acceptable reliability rates (α > 0.70) of all five subscales of the LLS.

Concerning the study by Polk and Egbert (2013), it is known that the authors answered each of the five research questions in the “Abstract” category.

The scale by Cook et al. (2013) presented Cronbach’s alphas of the subscales all in the acceptable range and the reliability of the total scale was quite strong (α = 0.88). Cook et al. (2013, p. 53) also performed a CFA “of principal components using varimax rotation”. However, Cook et al. (2013, p. 53; 57) pointed out that the “factors produced did not strictly correspond to the five languages defined by Chapman (1992)”, and that, in short, the results suggested “the forms of sacrificial, intimate, quality time, supportive, and comforting love”.

The study by Leaver and Green (2015) showed that: 1) the researchers identified the PLL of each participant; 2) there was no significant difference between non-preferred and preferred LL for respiratory rate; 3) there was mean difference for pulse rate response to preferred LL; and 4) there was mean difference for skin conductance response to preferred LL, and a significant difference found between non-preferred and preferred LL.

Regarding the study by Surijah and Septiarly (2016, p. 68), the item selection process “extracted 17 valid items from 34 5LLS items”, employing Principal Components Analysis and Varimax. According to the authors, all 17 valid items submitted to the CFA confirmed five factors as the 5LL construct proposed by Chapman. In addition, Surijah and Septiarly (2016, p. 69) also investigated the hypothesis of the PLL, finding “only 29 participants” in this category, pointing out that the prevalent LL was Words of Affirmation (entire sample).

Concerning the study by Murillo (2017), it showed that: 1) 22 of 30 students were effectively evaluated using their PLL to verify whether there was an increase in intrinsic motivation; 2) Words of Affirmation was the predominant LL among students; and 3) there was a significant difference between the average of the intrinsic motivation pre-test scores (67.27), and the average post-test scores (80.45).
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From the work by Surijah and Kirana (2020, p. 61), the authors stated that the “finding suggested that the five-component model of LL did not have a good fit”. Thus, based on the CFA data, the authors performed an EFA “to examine the components or structure of the LL within contextual limitations”, obtaining “four components”. From the item analysis, Surijah and Kirana (2020, p. 63) “observed [...] the element of sacrifice in component 1”, and that “the findings [...] suggest that there are four components of LL”: Physical Touch, Words of Affirmation, Quality Time and “a new/different component that relates to ‘sacrifice’”.

Discussion Category

Egbert and Polk (2006, p. 25) stated that the “five factors were related to another properly established instrument, thus demonstrating its construct validity”, pointing out that future research “should include a more diverse group of participants so that the results are more generalizable”, as well as the refinement of the LL items to “improve the factorial structure”.

As for the 2013 work, Polk and Egbert (2013, p. 6) asserted that the results of this study extend Chapman's (1992) thesis in some important ways. First, this study tested the LLS construct validity of Egbert and Polk (2006). The forced-choice items [...] provided a different way of testing the predictive ability of LLS. As Egbert and Polk (2006) only tested how the partner tends to feel loved, this study extends the validity of the LL items because it examined both partners [...].

Thus, Polk and Egbert (2013, p. 6) suggested that more tests should “be performed before making any generalizations about LLs”. As one limitation of the study, Polk and Egbert (2013) elucidated the homogeneous factor of the sample with little experience in relationships.

Cook et al. (2013, p. 58), in turn, pointed out that LL “demonstrated in this study take the forms of sacrificial, intimate love, quality time, support and comfort”, i.e., “this factorial structure differs from that demonstrated in Egbert and Polk (2006)”. In this sense, Cook et al. (2013, p. 58-59) acknowledged that the research team’s effort “to strengthen empirical support or refute the number and independence of languages asserted by Chapman is [...] ambiguous”, pointing out “the sample size” as one limitation of the study. As future directions, Cook et al. (2013, p. 59) stated that it seems “relevant to further explore the
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The work by Cook et al. (2013) did not bring the results of their second study.

The study by Leaver and Green (2015, p. 1) pointed out that the “composite score of physiological responses indicated a significant increase in arousal for when participants heard their primary LL” – “participants' heart rate and skin conductance significantly increased for the preferred LL, while no significant changes in respiratory rate were found”. For Leaver and Green (2015, p. 1), “These results indicate an additional validation, within the physiological domain, for the intriguing theory [...] of Dr. Chapman”.

Concerning the work by Surijah and Septiarly (2016, p. 70), these authors considered that the “study shows a promising result with five components of the 5LL”, and that regarding the prevalence of LL “Words of Affirmation”, Surijah and Septiarly (2016, p. 71) pointed out that the insertion of the contextual element in the analysis could help to explain this phenomenon, because despite “of their diverse ethnic background, all respondents were Indonesian. This is considered unique as Indonesians rarely give verbal praise or rewards”.

Among several future directions, the authors pointed out that new tests should involve a larger number of participants, including Indonesians from outside Bali. Concerning the conclusions, Surijah and Septiarly (2016, p. 72) emphasized that the “factor analysis indicated a promising result mirroring Chapman’s initial construct and the results of previous studies (Egbert & Polk, 2006)”, which “extends the empirical supports for Chapman's theory and opens up the possibility of further validating the construct”.

As for the study by Murillo (2017, p. 10), “The results revealed that a teacher who is concerned” with the 5LL of students in the school context generates “positive impacts on the social and academic performance of students”, in terms of “engagement, motivation, self-esteem and self-connection”. Thus, for Murillo (2017, p. 10) “it is acceptable that Chapman's love languages are intertwined with the development of intrinsic motivation within the classroom”.

From the DTA of Surijah and Kirana (2020, p. 64) work, it is known that “the CFA findings indicate that the tested model does not support the initial hypothesis that the LL is composed of five aspects” – “the EFA findings [...] suggest that there are four factors that form the construct of love languages”.

In addition, Surijah and Kirana (2020, p. 64) pointed out that “the EFA results indicated three components [...] with homogeneous items”: Words of
Affirmation, Quality Time and Physical Touch, and that “the items in Acts of Service and Gifts collectively form a new component”. However, Surijah and Kirana (2020, p. 64-65) pointed out that “the modification of the Likert scale [...] and the increase in options resulted in strong support for the validity of the LL construct”, as the sample can truly evaluate how much they felt loved in each of the items. Surijah and Kirana (2020, p. 66) also pointed out that the study on screen “identified 62 participants as having a primary love language”. Reexamining the “pure category” data, the authors identified Quality Time as the most prevalent.

As for the analysis of the items that form component 1, Surijah and Kirana (2020, p. 65) pointed out that “the similarity in these items is in the ‘sacrifice’ element”, which is similar to the “findings in the research by Cook et al. (2013)”. Thus, Surijah and Kirana (2020, p. 67) said they believed that “more research is needed to find consistency in the findings, either through research replication or exploration of love languages in samples with different characteristics”. As a limitation of the study, the authors pointed out the age of the participants and suggested that future research samples include older people.

Concluding their article, Surijah and Kirana (2020, p. 68) pointed out that the LL “of 'sacrificial love' is the only finding” of the research in question, and that “from this discovery, [...] the components of LL in the context of this research are composed of four aspects” – Sacrificial Love, Words of Affirmation, Physical Touch and Quality Time, being, therefore, “different from the initial concept of Chapman (2010)".

Results of the DTA and Discussion

Findings, as well as convergences and divergences among the texts of the DTA, are discussed here.

Egbert and Polk's work (2006) focused on one hypothesis of Chapman's 5LL theory. Thus, their article is the academic record of the study that empirically validated each LL. From the DTA of five texts, it is known that Egbert and Polk conducted the pioneering empirical study of the 5LL originally proposed by Chapman in 1992. Excepting Murillo (2017), all the other authors cited Egbert and Polk (2006).

From the analysis of Polk and Egbert's (2013) text only, it is known that this was their second work, i.e., further research on 5LL. This new study
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presented three novelties regarding: 1) the methodology (larger sample, construction of three new scales, and testing of the constructs of the 2006 work); 2) the focus (the PLL); and 3) the theoretical frameworks (more empirical evidence supporting the 5LL theory). However, the results suggested further testing given the lack of significant and consistent findings concerning Chapman's primary love language claiming. From the DTA of the texts, it was observed that, except Cook et al. (2013) and Leaver and Green (2015), all the other authors cited Polk and Egbert (2013).

From the analysis of the text by Cook et al. (2013), it is known that these researchers carried out two studies regarding the 5LL, and that this article brought only the results of the first study, suggesting 5LL, but not exactly as proposed by Chapman. Thus, Cook et al. (2013) validated only the LL “Quality Time” (Chapman, 2006). From the DTA of five texts, it is known that only Surijah and Septiarly (2016) and Surijah and Kirana (2020) cited Cook et al. (2013).

From the DTA on the poster by Leaver and Green (2015), it is known that the authors, citing only Egbert and Polk (2006), validated the hypothesis of the primary love language (Chapman, 2006).

The text by Surijah and Septiarly (2016) pointed out that these researchers built, in Indonesia, a 5LLS from Chapman’s 5LL theory, relying on the works of Egbert and Polk (2006), Polk and Egbert (2013), and Cook et al. (2013). The new scale included the contextual element, and it was tested using the CFA, to test the universality of Chapman’s 5LL. Leaver and Green (2015) were not cited. The work by Surijah and Septiarly (2016, p. 66) was “the first study of 5LL in Indonesia”, and it was cited by Murillo (2017) and by Surijah and Kirana (2020).

Murillo (2017) cited Polk and Egbert (2013), and Surijah and Septiarly (2016), but did not mention Egbert and Polk (2006), Cook et al. (2013), and Leaver and Green (2015). However, Murillo (2017) anchored her study on “The 5LL”, “The 5LLC”, and “D5LL at School”, indicating that these references could be relevant to research on education and for both initial and continued teacher training.

The article by Surijah and Kirana (2020) displayed a continuation of the research done by Surijah in 2016. The study of 2020 showed the sample expansion, the construction of a new 5LL, the use of CFA and EFA, and an adaptation of the Likert scale. The finding – sacrificial love – was similar to that of Cook et al. (2013).

Concerning convergences, three are worth mentioning: 1) in five studies,
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the authors constructed new scales, with Likert-type responses, based on Chapman's 5LL theory, and submitted them to CFA, obtaining acceptable reliability indices; 2) all authors suggested that further studies on Chapman’s 5LL theory should be carried out; and 3) all authors advocated that future analyses should involve a larger number of different participants.

As for differences, three stood out: 1) the lack of consensus regarding the primary love language hypothesis (Chapman, 2006); 2) Cook et al. (2013, p. 57) validated only “Quality Time”; and 3) Surijah and Kirana (2020, p. 68) validated 4LL – sacrificial, Words of Affirmation, Physical Touch, and Quality Time.

As relevant results of this DTA, it is worth pointing out that: 1) three studies – Egbert and Polk (2006), Polk and Egbert (2013), and Surijah and Septiarly (2016) empirically validated Chapman's original 5LL; 2) Leaver and Green (2015) validated the primary love language hypothesis; and 3) Murillo (2017) empirically validated that Chapman's two hypotheses influenced students' intrinsic motivation in the classroom setting.

FINAL CONSIDERATIONS

From the DTA of seven academic texts, it is known that Chapman's 5LL theory has two central ideas: 1) there are five love languages, and 2) there is a primary love language.

The 5LL – love can be expressed/felt through five behaviors or “languages”, such as Words of Affirmation, Gifts, Quality Time, Physical Touch, and Acts of Service – were declared as empirically valid constructs by three academic studies. Chapman's second idea – each person has a primary love language – was empirically validated by two academic works.

On the other hand, two studies found a “sacrificial love” (Cook et al., 2013; Surijah; Kirana, 2020), which means a different concept from Chapman’s 5LL theory. However, it is worth mentioning that all authors suggested that further research on Chapman’s 5LL theory should be carried out.

Thus, as a result of this State of Knowledge bibliographic research, it can be said that the studies of Egbert and Polk (2006), Polk and Egbert (2013), Leaver and Green (2015), Surijah and Septiarly (2016), and Murillo (2017) were considered relevant to enhance the theoretical framework of the master's investigation in Education, completed in 2022 by the first author of this article.
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Furthermore, it can be said that their findings academically validated the two main 5LL principles in “The 5 love languages of children” (Chapman; Campbell, 2017), which therefore makes it an academic reference for both teacher training and qualitative research.

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