

# LANGUAGE LEARNING APTITUDE DIAGNOSTICS FOR CLASSROOM PRACTICE

Tema

Die Fähigkeit, eine neue Sprache zu erlernen, variiert stark zwischen Individuen. Während einige Personen eine neue Sprache schnell und mühelos lernen, haben andere Schwierigkeiten, sie zu meistern. Diese Unterschiede werden oft auf die spezifische Begabung einer Person zurückgeführt. Im wissenschaftlichen Kontext wird diese Fähigkeit als *Language Learning Aptitude (LLA)* bezeichnet. Im Schulunterricht in deutschsprachigen Ländern spielt die LLA jedoch bisher keine Rolle, obwohl sie ein wichtiger Prädiktor für den Erfolg im Fremdsprachenlernen ist. Es gibt bisher keine leicht zugänglichen und zuverlässigen diagnostischen Instrumente, um die LLA von Kindern in deutschsprachigen Schulen zu messen. Das Ziel dieses Artikels ist es, ein neues diagnostisches Instrument namens GLLAD (*German Language Learning Aptitude Diagnostics*) vorzustellen, das speziell für den Einsatz in deutschsprachigen Schulen entwickelt wurde und der Lehrkräfte helfen soll, individuelle Sprachlernprofile zu erstellen und ihre Unterrichtsmethoden entsprechend anzupassen.

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## 1. Introduction

Educators would agree that their students vary in how quickly and how well they are able to learn new languages. Some students seem to pick up a new language effortlessly and with great success, while others struggle to learn it and never seem to achieve a satisfactory level of competence. Often, these differences are linked to a speaker's specific ability: this person has 'an ear for languages', while that other person has 'no talent' for learning languages. Popular theories to explain these differences between people include the number of languages someone already knows or other related talents such as musical ability. In scientific research, this ability to acquire new languages is referred to as 'language learning aptitude' (LLA) and has been defined as "an individual's initial state of readiness and capacity for learning a foreign language and probable facility in doing so" (Carroll, 1981: 86) given the presence of motivation and opportunity.

It is thus highly surprising that the concept of a LLA appears to play no role in the school context of German-speaking countries, neither in the training of (future) language teachers, be it pre- or in-service, nor in actual classroom practice (e.g., Wagner, 2020; Gut & Matz, 2022: 240). Knowing about children's individual strengths can enable teachers to provide differentiated support in the language classroom. It would allow for the provision of adapted language classes, depending on the pupils' individual results. While LLA diagnostic tests are, however, not intended for selection purposes, they can offer supplementary information that may be beneficial when making decisions regarding language-related choices in school. For instance, the child's aptitude for language learning can influence decisions regarding their education, such as whether they should attend a CLIL (content and integrated language learning) school or pursue additional foreign language studies.

Research has shown that LLA is a highly significant predictor of foreign language learning success (e.g., Ehrman & Oxford, 1995; Kiss & Nikolov, 2005; Li, 2016), more so than motivation or intelligence. Unfortunately, however, in German-speaking countries it is not yet possible to diagnose LLA of children because no easily accessible and reliable diagnostic instruments exist.

It is the aim of this article to introduce the diagnostic tool GLLAD (German Language Learning Aptitude Diagnostics) for testing LLA in German-speaking school settings. In section 2, we discuss the scientific conceptualisation of LLA and how it has been tested so far. Section 3 presents the development of GLLAD, section 4 considers some practical implications for the school context, and section 5 gives a summary and an outlook.

## 2. LLA and tests for measuring it

Like general intelligence, LLA is conceptualised as “a hybrid construct related to a number of cognitive factors creating a composite measure regarded as the general capacity to master an L2” (Wen, Biedroń & Skehan, 2017). In other words, LLA is an umbrella term for several distinct and largely independent cognitive abilities that together reflect someone’s potential to quickly and successfully acquire a new language. The four main cognitive abilities that have been proposed to be specific for LLA (e.g., Carroll, 1981: 105) are:

- **Phonetic coding ability**, the ability to identify sounds, to form associations between sounds and symbols and to learn these associations
- **Grammatical sensitivity**, the ability to recognize the grammatical functions of words or morphemes
- **Rote learning ability**, the ability to efficiently learn associations between sounds and meanings
- **Inductive language learning ability**, the ability to infer the different rules of languages

Some conceptualisations of LLA include further cognitive abilities that also form part of general intelligence such as working memory and implicit learning skills

(e.g., Linck et al., 2013; Granena, 2020), others include only three (e.g., Skehan, 1998).

All conceptualisations of LLA are closely linked to the tests that were developed for measuring it. In fact, typically, the tests were designed first and those test parts – with each part measuring a different cognitive ability – that predicted foreign language learning success best were then combined to make up the concept of LLA. Thus, in line with the tradition of psychometric testing, “language aptitude is what language aptitude tests measure” (Dörnyei, 2005: 35). Most LLA tests that have been developed so far were designed with the aim of identifying specially gifted adults who could be quickly trained to learn new languages. The most famous and still widely influential test is the **MLAT** (Modern Language Aptitude Test) by Carroll and Sapon (1959), a paper and pencil test for English-speaking adults developed for the U.S. government that consists of five parts measuring the first three cognitive abilities listed above. Other tests include the freely available web-based **LLAMA** (Meara, 2005) designed for adults and children of any language background that tests the same cognitive abilities in four different tasks, and the not freely accessible **Hi-LAB** (Linck et al., 2013), which consists of 11 tasks and includes further cognitive abilities such as working memory and implicit learning and is designed for English-speaking adults.

There are only very few tests so far that have been developed to test LLA in children: Based on the MLAT, Carroll and Sapon (1967) developed the **MLAT-E** for

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English-speaking children aged eight to twelve. It consists of the four parts (i) HIDDEN WORDS: ability to associate sounds and symbols; (ii) MATCHING WORDS: sensitivity to grammatical structure; (iii) FINDING RHYMES: ability to hear speech sounds and (iv) NUMBER LEARNING: auditory alertness and ability to remember. The **PLAB** (Pimsleur, 1966) was designed for English-speaking children in secondary schools and includes six parts that test verbal ability, auditory ability, motivation and average grades. Kiss and Nikolov (2005) developed the **INYÉT 6** for Hungarian-speaking children aged 12, which is closely modelled on the MLAT. The only test of LLA for German-speaking children, called **FTU 4-6** (Fremdspracheneignungstest für die Unterstufe; Ingenkamp, 1971), was first proposed by Corell and Ingenkamp in 1958. It is an adaptation of MLAT-E, but unfortunately requires an audio tape for its administration, so that it is not easily accessible anymore. Although occasionally used in research (e.g., Scheibner-Herzig & Stäbener, 1980), the test has been criticized for its lack of validation (e.g., Reed & Stansfield, 2023: 40). It therefore seems urgently necessary to develop an accessible and easy-to-use LLA test for German-speaking children that can be integrated into the school context in German-speaking areas. **GLLAD**, which is introduced in the next section, is such a diagnostic instrument.

### 3. GLLAD

The development of GLLAD was driven by the objectives of creating a freely available, easy-to-use LLA testing instrument that can be applied within a 45-minute school lesson and that has been validated (see below) for children aged 12 (year 6 in the German school system). The test will be available in a web-based format and will offer immediate feedback in the form of a composite score as well as individual scores for the different cognitive abilities (see below).

GLLAD is being developed by an interdisciplinary team at the University of Münster, involving researchers from English didactics, English linguistics and Education. It is envisaged that it will consist of five parts of five parts that test the four underlying cognitive abilities: language-analytic abilities, memory for

lexical items, phonetic memory and implicit learning skills. The first three form part of the generally accepted concept of LLA that was first proposed by Carroll, while the fourth cognitive ability has more recently been found to play an important role in learning new languages, especially in an immersive context (e.g., Granena, 2020; Li & Zhao, 2021).

All parts of the GLLAD are based on validated diagnostic instruments for LLA and have been adapted for children:

Type of test	Based on
language-analytic abilities	PLAB 4, INYÉT
memory for lexical items	MLAT 5, Hi-LAB Paired Associates, INYÉT 4, LLAMA_B
phonetic memory	INYÉT 1, MLAT
implicit learning	LLAMA_D, research by Granena (2020)

GLLAD is anticipated to comprise a total of five parts, one task for ‘language-analytic abilities’, ‘memory for lexical items’ and ‘phonetic memory’ each, as well as two tasks that test implicit learning. Language-analytic abilities are tested by providing the children with words and sentences in an artificial language together with their German translation. They are then asked to find the matching sentence in the unknown language for a given German sentence in a single-choice format with four options. To test the memory for lexical items, children have two minutes to learn the words from an artificial language for twelve pictograms. In the test phase they hear these words one by one and are asked to select the corresponding pictogram. Phonetic memory ability is tested in a scenario where the children first listen to two, three or four – often similarly sounding – words in an artificial language and are then asked to identify which of them occurs in a sentence in this artificial language that they will hear subsequently. The two tests of implicit learning involve words presented in written or spoken form. The children have to indicate the meaning of the words (in written form) or whether they have encountered these words before (in spoken form). All test items (n=85) were constructed carefully to represent grammatical, morphological and phonological rules that exist in actual languages.

In early 2024, GLLAD first underwent a pilot study with 200 12-year-olds, which resulted in a modification of individual test items and entire test formats. A first validation study with 620 children followed in mid-2024 to test construct validity. At the end of 2024, four international experts on LLA carried out an evaluation of GLLAD and at the beginning of 2025 a second validation study was carried out involving 450 children. Convergent and discriminatory validity was tested against EFL self-concept (adapted from Rumlich, 2016) as well as the personality traits benevolence and conscientiousness (adapted from Bleidorn & Ostendorf, 2009). For assessing the retest-reliability, GLLAD was administered again to 150 of the children a few weeks later. In addition, criterion validity was tested by including teacher assessments of the individual children's LLA. We are currently working on evaluating the results of the second validation study. A standardisation study for GLLAD involving more than 1000 school children will be carried out in late 2025. Moreover, qualitative data from both children and their language teachers will be obtained and the user friendliness of the platform *FormR*, on which GLLAD is implemented, will be assessed. The final version of GLLAD is envisaged to become available for practitioners in late 2026.

#### 4. How can GLLAD be used in the school context?

We suggest several scenarios in which GLLAD can be meaningfully employed in the school context. First, the diagnostic instrument GLLAD can be used by teachers to discover unrecognized potentials and to provide more differentiated support for their pupils (Prat et al., 2020; see also Hughes et al., 2023: 85ff.), which can lead to transformative achievements (Preckel et al., 2020). As Wagner (2017) cites for the Austrian context, teachers are required by law to diagnose, differentiate and support their pupils individually. Government regulation for the support of pupils identifies the school as the central stakeholder for identifying talents. It is hoped that GLLAD results can help with identifying underachieving children with a high language learning ability who can then be supported more efficiently to unfold their full potentials.

The use of GLLAD by foreign-language teachers can also support more differentiated classroom practice in the form of the aptitude-treatment-interaction approach (Robinson 2002), which proposes that learning gains will be increased when the chosen teaching methods correspond to the children's individual aptitude profiles. Li (2017), for example, showed that learners with a high LLA benefitted more from explicit than from implicit feedback. In an intervention study, Wesche (1981) was able to show that pupils who were taught with a method that was suited to their individual LLA profile achieved higher proficiency scores and reported more pleasure in language learning than their counterparts. Similarly, Erlam (2005) found that 14-year-old learners with a high language-analytic ability benefitted most from an inductive rather than a deductive teaching style. Muñoz (2014) investigated the relationship between LLA, measured with an adapted version of MLAT-E, and the different language competence skills listening, reading, writing and speaking in 11- and 12-year-olds who had been learning English for three years. She found that high scores in memory for lexical items correlated strongly with high listening skills, while language-analytic ability and speaking skills were not correlated. Since GLLAD measures four sub-components of LLA and provides scores for each of them, foreign language teachers can accordingly adapt their teaching methods for pupils with different LLA profiles.

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Moreover, since GLLAD offers an objective diagnostic assessment of the language learning ability of an individual child, it can assist decisions such as whether this child should elect further foreign languages that currently have to be taken based on the school grade in the first foreign languages and parents' subjective views or preferences alone. When advising parents, teachers can refer to the test score in addition to the school grade and their general impression to facilitate such decisions. Similarly, GLLAD can be employed to objectivize selection processes: for example, when more children apply to be admitted to the CLIL branch than places are available, the test score can, among other factors, assist in the selection process.

## 5. Summary and outlook

We have described the diagnostic instrument GLLAD for assessing German-speaking children's LLA and have argued that GLLAD has the potential of providing differentiated insights into 12-year-old children's individual language learning ability profiles in the German-speaking context. The diagnosis of individual language learning profiles can assist foreign-language-related selection processes and decisions in school and supports the development of differentiated and effective teaching practices. We would like to thank the the Karg-Foundation for supporting our research.

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## References

- Bleidorn, W., & Ostendorf, F.** (2009). Ein Big Five-Inventar für Kinder und Jugendliche: Die deutsche Version des Hierarchical Personality Inventory for Children (HiPIC). *Diagnostica*, 55, 160–173.
- Carroll, J. B.** (1981). Twenty-five Years of Research on Foreign Language Aptitude. In K. C. Diller (Ed.), *Individual Differences and Universals in Language Learning Aptitude*. Newbury House Publ, pp. 83–118.
- Carroll, J. & Sapon, S.** (1959). *Modern language aptitude test: Form A*. Psychological Corporation.
- Carroll, J. B., & Sapon, S.** (1967). *Elementary Modern Language Aptitude Test*. San Antonio, TX: Psychological Corporation.
- Dörnyei, Z.** (2005). *The psychology of the language learner: Individual differences in second language acquisition*. Lawrence Erlbaum Associates.
- Ehrman, M. & Oxford, R.** (1995). Cognition plus: Correlates of language learning success. *Modern Language Journal*, 79, 67–89.
- Erlam, R.** (2005). Language aptitude and its relationship to instructional effectiveness in second language acquisition. *Language Teaching Research*, 9, 147–171.
- Granena, G.** (2020). *Implicit language aptitude*. Cambridge University Press.
- Gut, U. & Matz, F.** (2022). Die Bedeutung von Sprachlernbegabung für den Englischunterricht. In C. Fischer & D. Rott (eds.), *Individuelle Förderung - Heterogenität und Handlungsperspektiven in der Schule*. München: utb, pp. 237–247.
- Hughes, M., Golonka, E. & Tseng, A.** (2023). The high-level language aptitude battery (Hi-LAB): Development, validation, and use. In Z. Wen, P. Skehan & R. L. Sparks (Eds), *Language aptitude theory and practice*. Cambridge University Press, pp. 73–93.
- Ingenkamp, K.** (1971). *Fremdspracheneignungstest für die Unterstufe*. Weinheim: Beltz.
- Kiss, C. & Nikolov, M.** (2005). Developing, Piloting, and Validating an Instrument to Measure Young Learners' Aptitude. *Language Learning*, 55 (1), 99–150.
- Li, S.** (2016). The construct validity of language aptitude. *Studies in Second Language Acquisition*, 38, 801–842.
- Li, S.** (2017). The effects of cognitive aptitudes on the process and product of L2 interaction: A synthetic review. In Laura Gurzynski-Weiss (Ed.), *Expanding individual difference research in the interaction approach: Investigating learners, instructors, and other interlocutors*. Amsterdam/Philadelphia: John Benjamins, pp. 41–70.
- Li, S., & Zhao, H.** (2021). The methodology of the research on language aptitude: A systematic review. *Annual Review of Applied Linguistics*, 41, 25–54.
- Linck, J. A., Hughes, M. M., Campbell, S. G., Silbert, N. H., Tare, M., Jackson, S. R., Smith, B. K., Bunting, M. F., & Doughty, C. J.** (2013). Hi-LAB: A new measure of aptitude for high-level language proficiency. *Language Learning*, 63(3), 530–566. DOI: 10.1111/lang.12011v
- Meara, P.** (2005). *LLAMA language aptitude tests: The manual*. University of Wales Swansea.
- Muñoz, C.** (2014). The Association Between Aptitude Components and Language Skills in Young Learners. In M. Pawlak & L. Aronin (Eds), *Essential Topics in Applied Linguistics and Multilingualism, Second Language Learning and Teaching*. Springer International, pp. 51–68.
- Pimsleur, P.** (1966). Testing foreign language learning. In: A. Valdman (Ed), *Trends in language teaching*. New York: McGraw Hill, pp. 175–186.
- Prat, C., Madhyastha, T., Mottarella, M. & Kuo, C.** (2020). Relating natural language aptitude to individual differences in learning programming languages. *Scientific Reports*, 10, 3817.
- Preckel, F., Golle, J., Grabner, R., Jarvin, L., Kozbelt, A., Müllensiefen, D. & Worrell, F.** (2020). Talent development in achievement domains: A psychological framework for within and cross-domain research. *Perspectives on Psychological Science*, 15, 691–722.
- Reed, D. J., & Stansfield, C.** (2023). The MLAT-Elementary: History, adaptations and current uses. In Z. Wen, P. Skehan & R. L. Sparks (Ed), *Language aptitude theory and practice*. Cambridge University Press, pp. 25–46.
- Robinson, P.** (2002). Learning conditions, aptitude complexes and SLA: A framework for research and pedagogy. In P. Robinson (Ed), *Individual differences and instructed language learning*. Amsterdam: Benjamins, pp. 113–136.
- Rumlich, D.** (2016). *Evaluating bilingual education in Germany: CLIL students' general English proficiency, EFL self-concept and interest*. Peter Lang.
- Scheibner-Herzig, G. & Stäbener, H.** (1980). Beziehungen zwischen Fremdspracheneignung und Fremdsprachenleistung, untersucht an Schülern der Erprobungsstufe eines Gymnasiums. *System*, 8 (1), 53–58.
- Skehan, P.** (1998). *A cognitive approach to language learning*. Oxford University Press.
- Wagner, T.** (2017). „Catch a young swallow. Roast her in honey. Eat her up.“ Then you will understand all languages. Fremdsprachliche Begabung und deren Diagnostik. In C. Fischer, C. Fischer-Ontrup, F. Käpnick, F. J. Mönks, N. Neuber & C. Solzbacher (Eds), *Beiträge aus der Begabungsförderung*. Waxmann, pp. 109–117.
- Wagner, T.** (2020). Fremdsprachliche Begabung – ein Stiefkind in der beruflichen Bildung? bwp@ Spezial PH-AT1 online. [https://www.bwpat.de/spezial-ph-at1/wagner\\_bwpat-ph-at1.pdf](https://www.bwpat.de/spezial-ph-at1/wagner_bwpat-ph-at1.pdf)
- Wen, Z., Biedroń, A., & Skehan, P.** (2017). Foreign language aptitude theory: Yesterday, today and tomorrow. *Language Teaching*, 50 (1), 1–31.
- Wesche, M.** (1981). Language aptitude measures in streaming, matching students with methods, and diagnosis of learning problems. In K. Diller (Ed), *Individual differences and universals in language learning aptitude*. Rowley: Newbury House Publishers, pp. 119–154.