

A Proposed Case-Based Learning Model to Operationalize the Granular Learning Theory

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Abstract

Instructional models are vital for applying learning theories in practice. This article aims to operationalize the Granular Learning Theory, which asserts that learning in the Alternative Learning System (ALS) is most effective when tailored to individual needs, diversity, and specific learning environments. To support this, the SALAS model is proposed: *S*-cout for potential learners, *A*- assess the recruited learners, *L*-link the assessment results to the six learning strands, *A*s-ctualize instructional blueprints and sustain learning through Informal Education and extra-curricular activities. The model is based on case-based pedagogy and integrates practices for learning modalities and assessment methods across three learner groups. The model is intended to guide ALS program implementers in the Philippines and stakeholders working with underserved, marginalized, or geographically isolated communities. As the study concluded with the model's development, further research is recommended to evaluate its effectiveness.

Keywords: alternative learning education, inclusive education, instructional model, granular learning theory, SALAS model

1. Introduction

Instructional models are concrete representations of theories that provide detailed explanations of educational phenomena.. These models fulfil several functions, such as connecting theoretical concepts to practical applications and operationalizing abstract ideas. Additionally, they offer structured frameworks that help teachers apply theoretical principles in classroom environments. When implemented effectively, instructional models align school stakeholders, particularly teachers and students, with shared instructional objectives and foster collaboration among educators. This alignment improves the effectiveness and efficiency of teaching and learning tasks. (Smaldino, 2023). Brooke (2021), notes that leading scholars agree that no single instructional model is universally optimal for classroom instruction. Instead, a range of models is available for teachers to use as guides to achieve specific learning outcomes. Each model possesses distinct characteristics, which facilitate a deeper understanding of pedagogical processes and inform the design of curriculum components, including teaching activities and assessment tasks. Scholars have argued that the consistent use of instructional models in teaching leads to systematic mastery of lesson content by teachers and ensures they remain informed about new ideas and knowledge across disciplines.

Inarguably, instructional models developed through scholarly research are based on comprehensive analyses of the learning needs of specific learner groups and the application of empirical strategies to address these needs. Such models aim to facilitate efficient instructional delivery and improve learning outcomes. Consequently, educators must evaluate the appropriateness and relevance of the chosen model to ensure it effectively meets the actual needs and demands of the target learners. This evidence-based approach can foster improved comprehension, the development of higher order thinking skills, and increased learner autonomy in managing their own learning trajectories, among other advantages (Jang et al. 2013)

Established instructional design models have consistently demonstrated effectiveness in delivering instruction and meeting learners' needs across diverse content areas. (Saenab et al. 2021) developed and validated the ReCODE (Reading, Connecting, Observing, Discussing, Evaluating) model, which fosters learners' critical thinking skills through activities such as reading, connecting prior knowledge to new information, investigation-based tasksdiscussions, and evaluations. Similarly, Yumei (2024) investigated the development of college English teachers' technological pedagogical content knowledge (TPACK) and the enhancement of students' learning outcomes using MOOC-based,

AI-powered flipped teaching and assessment of EFL writing (MAFTA). The findings revealed varying degrees of TPACK growth among participants, as evidenced by increased knowledge of the technology tools and improved ability to apply them in alignment with pedagogical beliefs about EFL writing instruction. Furthermore, students' essays showed significant improvement, and participants reported positive perceptions of the MAFTA model.

In teaching and learning science, Hanuscin & Lee (2008) reported that the learning cycle model developed by Karplus and Thir based on the inquiry teaching approach which involves exploration, concept reduction, and concept application was effective in learning fundamental science concepts. Similarly, Rodriguez (2023) found that a task-based supplementary instructional model was effective in teaching Chemistry as it met five criteria: instructional design and material organization, instructional quality, assessment, format, and presentation. Furthermore, Ebrahim & Soraghi (2010) indicated that the 5E, *engagement, exploration, explanation, elaboration, evaluation* developed by Bybee & Landes enable learners to redefine, reorganize, elaborate, and modify their initial scientific concepts through self-reflection and interaction with their peers and environment. This process allows students to apply their new understanding of scientific concepts while reinforcing the skills they have acquired.

Technology inspired instructional models also thrive such as the CAFÉ (Content, Activities, Facilitation, & Evaluation) and the Act-Think-Do-Evaluate (ATDE). The former was conceptualized to help K-12 teachers transform their classroom-based classes into emergency remote teaching. It operates on the premise that teachers demonstrate a clear understanding their learners' and instructional needs are cognizant of the technological resources available for their learners at home, as well as the instructional content. The latter, on the other hand, is intended to teach creativity, understand student learning status, and develop an innovative instruction design course to foster problem-solving skill, knowledge introspection, reflection, and construction (Wang, 2021; McKinney, 2016).

Several other models are available... The 6P4C model provides systematic guidance for e-learning emphasizing *participants*, teaching *platforms* planning, safe intellectual spaces, engaging presentations, and regular assessment of engagement, civility, communication, collaboration, and community-building (Byrne, 2023). Anchored Instruction Theory (AIT) situates learning in meaningful, problem-solving contexts and encourages students to form connections within and across content areas (Bransford, et al., 1990). (Cao et al. 2012) found that the e-learning design based on Cognitive Flexibility Theory increase intrinsic motivation and support creative thinking. Hendy & Montargot (2023) reported that the Technology Delivered Instruction (TDI) enhances learner engagement, tolerance for diversity, open inquiry promoting cultural diversity, equity, and inclusion in the classroom.

Teachers can support student-centered instruction by using instructional design models such as Process Oriented Guided Inquiry Lessons (POGIL), which encourage content mastery, higher-level thinking, problem-solving, and communication through cooperation and reflection (Branch & Kopcha, 2014). The ISMAN model promotes student competence through structured planning, development, implementation, evaluation, and organization of learning activities (Isman, 2005). The Gerlach and Ely model enables teachers to design effective lessons even with limited resources and diverse learner needs (Gerlach et al., 2017). According to Tu et al. (2023), the ATDE-based model for teaching creativity in design practice courses helps transform concrete experiences into abstract concepts and strengthens imaginative and analytical skills. Other widely used models, including ADDIE, ASSURE, and Systematic Design of Instruction, also support effective teaching and learning (Branch, 2009; Smaldino et al., 2008; Dick et al., 2001). Effective and flexible use of these models requires substantial knowledge and professional instructional design skills.

The Alternative Learning System (ALS) of the Philippines Education System

The Alternative Learning System (ALS) is a Philippine government initiative that provides basic education to individuals who have not completed the mandated education cycle. As stated in Republic Act 9155, ALS operates alongside formal education and incorporates both formal and informal learning. Its programs include the Basic Literacy Program (BLP), Accreditation and Equivalency (A&E), Indigenous Peoples Education (IPed), Arabic Language and Islamic Values Education in ALS (ALIVE in ALS), ALS for Differently Abled Persons (ALS-DAP), Radio-Based Instruction (RBI), and Education and Skills Training (EST). These community-focused, learner-centered programs support out-of-school youth, non-literate adults, school leavers, abused children, Indigenous Peoples (IPs), non-literate families, Muslim migrants, Depressed, Deprived, and Underserved Groups (DDU), and Persons with Disabilities (PWDs), among others (Department of Education, 2017).

ALS Target Learners' Groups in Granular Learning Theory

The development of the proposed granular learning theory focused on three groups within the ALS: PDLs, IPs, and non-literate adults enrolled in the Basic Literacy Program (BLP) and Accreditation and Equivalency (A&E) programs for Elementary and Junior High School certification. PDLs, individuals in conflict with Philippine domestic laws, participate in the ALS Behind Bars program, which aims to provide them with the same educational opportunities as those in regular classrooms. These learners are enrolled in either the BLP or A&E programs. In this study, PDLs from

government-controlled detention facilities were the primary target group. The IPs, specifically the Sama-Badjaos in an Eastern Visayas municipality, are enrolled in the ALS Indigenous Peoples Education (IPed) program, which emphasizes literacy and skills development to prepare them for employment and self-sufficiency. Non-literate adults, referred to as Out-of-School Adults (OSA), are enrolled in the BLP and reside in two municipalities in the Eastern Visayas region.

The Granular Learning Theory

The study, *A Proposed Theory for the Pedagogic Practices in Alternative Learning System (ALS)* by Labarrete & Gillo, introduces granular learning theory, which holds that ALS learners benefit most when instruction is tailored to their individual circumstances. Developed from the pedagogic practices of ALS program implementers, the theory focuses on three groups: PDLs, IPs, and Non-Literate Adults, across BLP and A&E streams. The research used grounded theory, collecting data from 18 program implementers through class observations, field notes, and semi-structured interviews, and analyzed it using Charmaz's procedures. Findings indicate that instruction is delivered through face-to-face sessions, modern and traditional technologies, and home visits. Assessment methods include performance-based, module-based, and portfolio formats. In summary, granular learning aligns with case-based pedagogy (Labarrete & Gillo, 2023).

Surveyed literature demonstrates a variety of instructional models grounded in established learning theories, each designed for specific purposes. However, none of the mentioned models address alternative learning delivery, such as the Philippines' ALS or the Granular Learning Theory by Labarrete & Gillo. Since learning theories require instructional models to be effective, there is a clear need for a contextualized approach. This study proposes a case-based instructional model to operationalize the Granular Learning Theory, aiming to help ALS teachers deliver basic education effectively and efficiently, particularly to PDLs, IPs, and non-literate adults.

2. The Development of the proposed SALAs Model

The SALAs model was developed according to the principles of case-based pedagogy. Scholars have identified several advantages of using cases in teacher education, including the creation of authentic learning environments, enhanced understanding of teaching and learning dynamics, and the promotion of higher order thinking and reflective skills (Bryan & Tippins, 2006). Case-based pedagogy is grounded in constructivism and incorporates theories of cognitive flexibility and situated cognition. Multiple approaches exist for developing and implementing classroom cases in teacher education. Consequently, it is essential to select cases that align with specific educational objectives and adapt them to include necessary attributes (Orey, 2017; Lloyd & Bahr, 2016). Accordingly, the SALAs model was designed based on cognitive principles exemplified in granular learning theory, which asserts that ALS learners achieve optimal outcomes when instruction is tailored to their individual circumstances. The model incorporates pedagogical practices related to learning modalities and assessment methods employed by ALS program implementers, specifically for the PDLs, IPs, and non-literate adult learners enrolled in the BLP and A&E programs. As further discussed in the study *A Proposed Theory for the Pedagogic Practices in Alternative Learning System (ALS)* by Labarrete & Gillo (2023), ALS teachers deliver instruction through face-to-face sessions, utilize both modern and traditional technologies, and conduct home visits. Assessment is multidimensional and includes performance-based, module-based, and portfolio formats. The SALAs model is also informed by the case-based pedagogy instructional framework of Akbulut & Hill (2020), which consists of four phases: inquiry focus, provision of space and time for consideration, active participation in learning, and synthesis of key ideas and practices.

Phase 1: Inquiry Focus. This phase requires a specific selection of the cases to be included in the study. In the development of the SALAs instructional model, three cases or group of learners, that is, the PDLs, IPs, and the Non-Literate Adults enrolled in BLP and A&E program served as main case. The target inquiry was on the instructional modalities employed by the program implementers and how assessment of learning is carried out on these specific cases or groups of learners. According to Morrow, et al. (2022), creating a focus on inquiry paved the way towards authentic learning, which is realized by incorporating tasks, information, and problem-solving opportunities reflective of real-life situations to use in future practices. It is also a practical approach to delivering instructional goods and services because it is responsive to the actual needs of the target learners.

Phase 1: Inquiry Focus. This phase entails the deliberate selection of cases for inclusion in the study. In developing the SALAs instructional model, three groups of learners were identified as primary cases: PDLs, IPs, and Non-Literate Adults enrolled in the BLP and A&E programs. The inquiry examined the instructional modalities employed by program implementers and the assessment methods used to evaluate learning within these groups. Morrow et al. (2022) contend that establishing an inquiry focus promotes authentic learning by integrating tasks, information, and problem-solving opportunities that reflect real-life situations, thereby preparing learners for future practice. This approach is considered practical because it addresses the specific needs of the target learners.

Phase 2: Space and Time for consideration. According to Hemphill, et al. (2015), open space and time are instrumental in generating ideas and solutions to the identified cases. In the context of the SALAs model, this phase is the assessment

dimension. It is direly needed in order to design specific modality of delivering instructional goods and services and assessment tasks responsive to the circumstances of the PDLs, IPs and the Non-Literate Adults as the pre-identified groups or cases of learners. The assessment results will serve as bases for the instructional decisions to link the pedagogic activities directly to the curriculum intended for these three groups of learners.

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Phase 3: Active Participation in Learning. In the context of the SALAs model, this stage refers to the decision of the program implementers to adopt a specific modality of instruction and design assessment tasks responsive to the circumstances and needs of the target learners of the identified groups or cases of learners. As explained by Tippins, et al. (2002), discussions play a critical role because they result in the enriched prior knowledge, experiences, and interests that the students bring to the pedagogic processes.

Phase 3: Active Participation in Learning. In the SALAs model, this stage requires program implementers to select appropriate instructional modalities and design assessment tasks tailored to the specific circumstances and needs of the target learner groups. Tippins et al. (2002) emphasize that discussions are essential, as they enrich students' prior knowledge, experiences, and interests, thereby enhancing pedagogical processes.

Phase 4: Synthesize Key Ideas and Practices. As applied in the SALAs model, this refers to sustaining the instructional processes and further improving every episode as needs arise. In this proposed instructional model, sustainability is best achieved through the provision of extra-curricular activities and partnerships with government and non-government entities. This collaborative approach ensures that the SALAs model is not just a theoretical construct, but a practical tool that can be adapted and improved in real-world educational settings, providing educators with a reliable and adaptable framework.

Phase 4: Synthesize Key Ideas and Practices. Within the SALAs model, this phase involves sustaining instructional processes and continuously improving each episode in response to emerging needs. Sustainability in this instructional model is promoted through the integration of extra-curricular activities and partnerships with both government and non-government organizations. This collaborative strategy positions the SALAs model as a practical and adaptable framework for real-world educational contexts, rather than a purely theoretical construct.

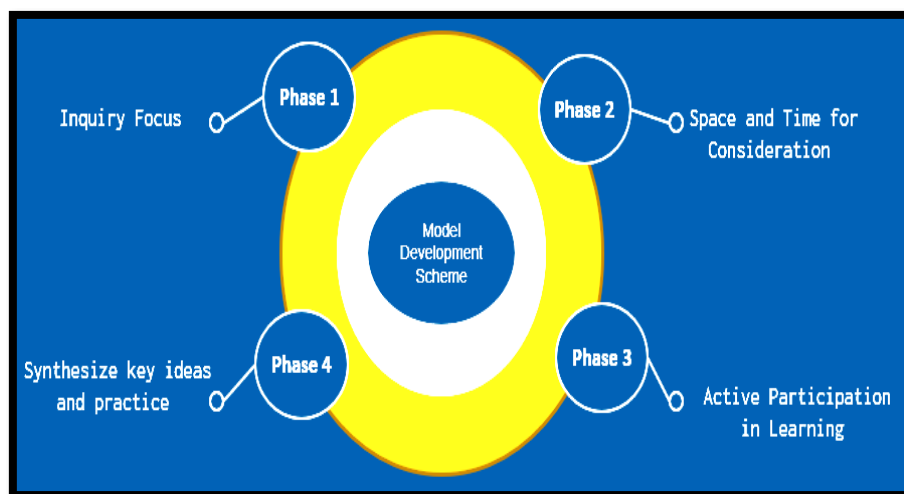


Figure 1. A schematic presentation of the instructional model development phases

Actualize the instructional design and sustain the learning momentum. This stage is identified as the teaching phase. During this phase, ALS program implementers execute the instructional blueprints developed for specific learner groups such as the PDLs, IPs, and Non-Literate Adults. These learners participate in various program offerings, such as the BLP, A&E, and IPed, among others. This phase involves implementing instructional episodes, during which diverse learning activities are provided, and assessments are administered. Regarding assessment, program implementers use formative, performance-based, module-based, alternative, and portfolio assessments. The selection of a specific assessment type depends on the competencies being addressed, learners' coping abilities, and situational requirements,

such as participation in extra-curricular activities or InFed classes. Lesson recitals are organized by learner group. For example, the PDLs, multi-purpose halls within their facilities are converted into instructional rooms. Classes for Ips, on the other hand, are conducted in halls of their local government units while those of the non-literate adults are typically held in learning centers designated within the school districts.

Meanwhile, learner engagement is fostered through InFed, Sports Festivals, and related extracurricular activities, which serve as introductory experiences. While these activities are designed to be engaging, they maintain an educational focus by requiring participants to complete a project and compose a narrative reflecting on their experiences. Program implementers utilize these activities to reinforce discipline and promote values such as sportsmanship, cooperation, and unity. The outputs from these events, along with regular class assignments, are compiled into comprehensive portfolios. These portfolios fulfill several functions, including presentation at district exhibits for stakeholders such as Local Government Unit officials, partner Non-Government Organizations, parents, DepEd officials, and the wider community. Furthermore, for learners who opt to take the A&E test, their portfolios account for 20% of their overall assessment performance.

3. Results and Discussions

The institutionalization of the ALS within the Philippine education system reflects a national commitment to advancing educational inclusivity. ALS addresses the academic and skills-development needs of Filipino learners from diverse backgrounds who have not completed the required basic education cycle. Akbar et al. (2023) and Ainscow et al. (2019) define inclusivity in education as an approach that accommodates the unique characteristics, interests, abilities, and learning needs of individual learners. This approach fosters a welcoming, equitable learning environment by promoting optimal participation in both academic and non-academic activities. Contextualization, a key component of the proposed SALAs case-based instructional model, is grounded in Contextualized Teaching and Learning (CTL) or Contextualized Instruction. According to Silseth & Erstad (2018) and Apiola & Tedre (2011), CTL encourages the use of diverse strategies and approaches tailored to the specific requirements of the industries in which learners are expected to participate. This method enables learners to apply their knowledge and skills within relevant contexts, thereby enhancing their understanding of industry practices. CTL recognizes that students often learn more effectively through hands-on, real-world experiences rather than through abstract instruction. The primary objective of CTL is to use context, grounded in traditional academic foundations, to guide instruction. This approach also actively engages students in the learning process, fostering greater involvement and participation in constructing meaning.

The final component of the proposed SALAs case-based instructional model involves integrating non-academic or extracurricular activities to enhance the teaching and learning process. Multiple studies, including Buckley & Lee (2021), have demonstrated that extracurricular activities improve academic performance and facilitate the development of discipline-specific skills and competencies. (Penjor & Dorji 2022) and (Belton et al. 2017) further contend that activities such as sports, clubs, music, and dramatization are effective for cultivating essential skills, including teamwork, leadership, and role-playing. These competencies are valuable in both educational and professional contexts. Supporting students' cognitive, physical, social, and emotional development through such activities promotes holistic growth and strengthens academic achievement. Moreover, (Penjor 2021) and (Kolinsky & Verhaeghe 2017) found that students who participated in extracurricular activities, particularly sports, attained higher academic performance than non-participants. Consequently, schools should provide adequate facilities and allocate sufficient time for extracurricular activities to ensure equitable participation opportunities for all students.

The ALS is the Philippines' version of programs in Southeast Asia that bring education to people in remote areas and to those who have not finished basic schooling. These efforts have shown clear benefits for students. For example, Alam et al. (2023) found that floating schools in Bangladesh provide basic education to children in flood-prone areas and give them hope. These schools serve over 30 students from riverbank communities, often cut off by floods, who board the school and are brought close to home after classes. In Vietnam, floating schools have helped disadvantaged youth in the Mekong Delta learn computer skills and financial literacy, improving the lives of residents (Hanoi Times, 2014). Rise & Adeyemi (2015) also noted that residents of Nigeria's Makoko water community view floating classrooms as a creative way to deliver education. Finally, (Mohammed 2016) found that solar-powered floating schools in flood-prone areas of Bangladesh use internet-connected computers to make learning more interactive and accessible for children from disadvantaged backgrounds. These schools also serve as libraries and adult education centers, providing parents and villagers with information on nutrition, health, hygiene, sustainable farming, and how to adapt to climate change.

Indeed, governments have a fundamental responsibility to ensure all citizens can access basic education. This commitment is realized through accessible, inclusive, and equitable services. Educational opportunities must also extend to individuals who have not completed basic schooling. As discussed above, education initiatives in Southeast Asian nations recognize education as a basic right and demonstrate a strong commitment to their citizens' educational futures.

The SALAs instructional model, based on case-based pedagogy, may serve as an alternative model to guide public and private sectors implementing education-related programs intended for the marginalized and underserved groups in disadvantaged and remote communities. It is hoped that by adopting the model, programs implementation becomes more efficient and truly responsive to each learner's unique pedagogic needs.

4. Conclusion and Recommendations

Scholars agree that pairing learning theories with models clarifies key concepts. The proposed SALAs model, based on case-based pedagogy, operationalizes the Granular Learning Theory introduced by (Labarrete & Gillo 2023) in their article, *A Proposed Theory for the Pedagogic Practices in Alternative Learning System (ALS)*. This theory asserts that ALS learners achieve optimal outcomes when instruction is tailored to their individual circumstances. The SALAs model incorporates pedagogical practices related to learning modalities and assessment methods used by ALS program implementers, specifically for PDLs, IPs, and non-literate adult learners in the BLP and A&E programs. The model aims to help ALS program implementers meet the specific needs of their learners, support their academic progress, and open up opportunities for jobs or further study after finishing the program. More generally, it can guide schools, private groups, and individuals who want to run programs for people who have not finished the required education, especially those who are underserved, marginalized, or live in remote areas. The researcher recognizes the importance of testing how well the model performs at the grassroots level. Depending on the results, the recommended teaching methods may be updated to improve them.

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