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Theoretical Foundations of Using Language Games for English Vocabulary Development in Middle Stage Education: A Conceptual Review and Integrative Framework

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Abstract

Vocabulary is the foundation of reading, listening, speaking and writing in English, yet learners in the middle stage of schooling (ages 11–14) often meet new words in rote lists that produce shallow, short-lived knowledge. Language games are widely recommended as an alternative, but the case for them is often made through anecdote rather than theory. This conceptual review brings together six bodies of theory – sociocultural theory, interactionist and input theories, cognitive theories of memory and processing, motivational and affective theories, developmental theories of play, and Wittgenstein's philosophy of meaning as use – to explain how and why well-designed games can promote English vocabulary development. The review proposes an integrative framework with six propositions that link game features (meaningful interaction, repeated retrieval, task-induced involvement, scaffolding, autonomy-supportive challenge and learner-appropriate play) to vocabulary outcomes (form–meaning mapping, depth of knowledge and retention). It also summarises what the empirical literature, including meta-analyses of game-based learning and gamification, can and cannot support, and sets out design principles and a research agenda for middle stage education. The paper contributes a theory-grounded vocabulary of mechanisms that teachers, curriculum designers and researchers can use to design, evaluate and compare game-based vocabulary instruction.

Keywords: language games; vocabulary acquisition; middle stage education; game-based learning; sociocultural theory; English as a foreign language; motivation

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1. Introduction

A learner's vocabulary strongly constrains what he or she can understand and express in a second or foreign language. Estimates for adequate comprehension of written and spoken English are large: about 8,000–9,000 word families for reading novels and newspapers, and 6,000–7,000 for informal spoken discourse (Nation, 2006). Such figures cannot be reached through classroom lists alone; they require sustained, varied and repeated meetings with words in use (Nation, 2013; Schmitt, 2008).

The middle stage of schooling is a decisive period for this growth. In India, the National Education Policy 2020 (Ministry of Education, 2020) organises school education into foundational, preparatory, middle and secondary stages, with the middle stage covering Grades 6–8, and the National Curriculum Framework for School Education 2023 (NCERT, 2023) emphasises competency-based, experiential and play-integrated learning. At this stage learners move from concrete classroom language to the more abstract and academic vocabulary of subject textbooks, while their attitudes towards English begin to harden into confidence or avoidance. Instruction that makes vocabulary memorable and enjoyable at this point may therefore have lasting effects.

Language games are a familiar response. Teachers have long used word puzzles, guessing games, board and card games, role-play contests and, more recently, digital games to make vocabulary work lively (Wright, Betteridge & Buckby, 2006). Reported advantages include higher motivation, more interaction and better retention (Huyen & Nga, 2003; Uberman, 1998; Yip & Kwan, 2006). However, the literature is stronger on practical recipes than on explanation. Without a theory of *why* games work, teachers cannot tell which games are likely to help, which will entertain without teaching, and how a game should be adapted for a particular group.

This paper addresses that gap. It asks: (1) Which theories best explain how language games can foster English vocabulary development? (2) How do these theories combine into a coherent framework? (3) What does the framework imply for middle stage education and for future research? The contribution is conceptual: the paper does not report new learner data, but organises existing theory and evidence into propositions that can be tested.

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2. Approach to the Review

The paper is a theory-driven narrative review rather than a systematic review. Sources were selected on three criteria: (a) foundational theoretical works in learning, language acquisition, motivation and play; (b) influential research on second language vocabulary learning; and (c) empirical syntheses and studies on games, game-based learning and gamification in language education. Searches of Scopus, Web of Science and Google Scholar combined terms such as *language games*, *vocabulary*, *game-based learning*, *gamification*, *EFL* and *young adolescents*. Priority was given to peer-reviewed journals, authoritative books and meta-analyses. Because the review is selective, its conclusions should be read as an interpretive synthesis; Section 8 discusses the resulting limitations.

3. Conceptual Clarifications

3.1 Games, play and gamification

Three related terms need to be separated. *Play* is a free, intrinsically motivated activity (Huizinga, 1955). A *game* is a structured form of play with rules, goals, challenge and feedback. *Gamification* is the use of game design elements in non-game contexts (Deterding, Dixon, Khaled & Nacke, 2011). A *language game* in this paper is a rule-governed activity in which learners must use or process English words to achieve a game goal, so that vocabulary is the means of playing and not merely the subject of a quiz. The distinction matters: a points-and-badges layer on a spelling drill is gamification, but it is not necessarily a language game, because the language use may be no more meaningful than before.

3.2 What counts as vocabulary development

Knowing a word involves more than recognising its form and a translation. Nation (2013) distinguishes knowledge of form (spoken, written, parts), meaning (form–meaning link, concept, associations) and use (grammatical function, collocations, constraints on use), each with receptive and productive aspects. Development is therefore both *breadth* (how many words) and *depth* (how well each is known), and it proceeds through both incidental learning, as a by-product of communication, and intentional learning, through deliberate attention to words (Hulstijn, 2001;

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Schmitt, 2008). A theory of language games for vocabulary must explain how games can support all of these.

4. Theoretical Foundations

4.1 Sociocultural theory: learning through mediated interaction

Vygotsky (1978) argued that higher mental functions originate in social interaction and are mediated by tools, language foremost among them. The zone of proximal development (ZPD) is the distance between what a learner can do alone and what he or she can do with help. Vygotsky (1967) also gave play a central developmental role, because in play children act "a head taller" than in ordinary behaviour, following rules that stretch their abilities.

For vocabulary, this suggests that games are valuable as *structured social spaces* in which a learner can use words that are not yet fully controlled, with peers and the teacher supplying support. Scaffolding (Wood, Bruner & Ross, 1976) can take game-embedded forms: pictures, partial clues, peer hints, sentence frames and gradually reduced support. Games with team roles and collaborative goals create reasons to negotiate word meanings, to explain, and to correct one another, which are exactly the processes through which a word moves from "known with help" to "known independently".

4.2 Interactionist and input theories: comprehensible input, negotiation and output

Krashen (1982, 1985) proposed that acquisition depends on comprehensible input and that anxiety raises an "affective filter" that blocks it. Although the strong claims of this model have been contested, the emphasis on understandable, plentiful input remains influential. Long's (1996) interaction hypothesis added that negotiation of meaning – clarification requests, confirmation checks, rephrasing – makes input comprehensible and draws attention to unknown forms. Swain (1985) argued that learners also need to *produce* language, because producing pushes them to process it syntactically and notice gaps in their knowledge.

Information-gap and guessing games institutionalise precisely these conditions. When one player must describe a word without naming it, and another must infer it, the pair generates input pitched at the other's level, negotiation when understanding fails, and pushed output when the describer searches for an alternative expression. A game design that gives different players different

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information thus produces more purposeful negotiation than a drill in which everyone already knows the answer.

4.3 Cognitive theories: depth of processing, involvement, memory and load

Cognitive theories explain why some encounters with a word are remembered and others are not.

Levels of processing. Craik and Lockhart (1972) proposed that retention depends on the depth of processing: semantic and elaborative processing yields more durable traces than shallow, perceptual processing. Games that require learners to classify, relate, contrast or use words for a purpose encourage deeper processing than copying or matching spellings.

Involvement load. Laufer and Hulstijn (2001) and Hulstijn and Laufer (2001) operationalised depth in the Involvement Load Hypothesis. A task's effectiveness depends on *need* (is the word required to do the task?), *search* (must the learner look for its meaning or form?) and *evaluation* (must the learner compare it with alternatives or judge its fit?). A well-designed game can build all three components into its rules, for example when a team scores only by choosing the best word to complete a clue and then justifying the choice. A game that is fun but that allows learners to win without attending to the target words has a low involvement load and is therefore predicted to produce little learning.

Dual coding and multimedia learning. Paivio (1986) argued that information encoded both verbally and visually is better retained. Mayer (2009) developed this into principles of multimedia learning. Picture cards, mime, drawing games and well-designed digital graphics supply a second code for word meaning, particularly helpful for concrete vocabulary and for learners with limited English.

Repetition, spacing and retrieval. Vocabulary learning needs repeated encounters (Webb, 2007), distributed over time (Cepeda, Pashler, Vul, Wixted & Rohrer, 2006) and involving retrieval, since actively recalling information strengthens memory more than re-reading it (Roediger & Karpicke, 2006). Games are natural vehicles for these demands: the same set of words can recur across rounds, variants and weeks without the boredom of repeated drilling, and most games require learners to retrieve a word from memory in order to play.

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Cognitive load. Sweller (1988) showed that working memory is limited and that tasks with excessive demands impair learning. Complex rules, noisy graphics, time pressure and competitive tension can consume capacity that should be devoted to the target words. Good game design therefore keeps the rules simple, makes the language the main challenge, and limits distracting elements.

4.4 Motivational and affective theories: why learners keep playing

Self-determination theory proposes that motivation and well-being are supported when the needs for autonomy, competence and relatedness are satisfied (Ryan & Deci, 2000). Games can address all three: choice of roles or strategies (autonomy), clear goals with graded challenge and immediate feedback (competence), and cooperation or friendly rivalry with peers (relatedness). Csikszentmihalyi's (1990) concept of flow – absorbed engagement when challenge matches skill – gives a related account of why a well-balanced game holds attention.

In language education specifically, motivation reflects attitudes to the language and its community (Gardner, 1985) and, in the classroom, the learning situation itself (Dörnyei, 2001). Games lower anxiety by turning errors into part of the play and by diffusing attention from the individual to the team, which is the practical counterpart of Krashen's affective filter. They also give learners frequent experiences of success, which build the self-confidence that Dörnyei identifies as a key motivational condition. Competition, however, is double-edged: it can energise some learners and discourage those who are repeatedly out-scored, so that cooperative or team-based formats, and recognition of effort and improvement, are often safer choices in mixed-ability classes.

4.5 Developmental theories of play and the middle stage

Piaget (1962) described play as a vehicle of assimilation, in which children practise and consolidate what they know; as thinking becomes more abstract, play develops into games with rules. Early adolescents (the middle stage) are generally capable of rule-based, strategic games and are increasingly sensitive to peer evaluation, a combination that makes games with peer cooperation both attractive and potentially threatening if errors are publicly penalised. Eccles and Midgley (1989) argued that adolescents' motivation declines when the school environment does not fit their developmental needs for autonomy, social interaction and cognitively challenging

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work; games that offer choice, collaboration and real challenge are a classroom-level response to this mismatch.

Cook (2000) added that language play – punning, rhyme, invention and rule-bending – is not trivial but a resource for language learning: play with form creates memorable patterns and encourages attention to sound, structure and meaning. Word-building, rhyme, riddle and wordplay games therefore exploit a natural tendency of young learners rather than imposing an artificial one. The middle stage is also the point at which learners meet more abstract and academic vocabulary (Coxhead, 2000), so games should progressively move beyond concrete nouns to word families, collocations, synonyms and subject-related words.

4.6 Wittgenstein: meaning as use

The phrase "language game" originates in Wittgenstein's (1953) *Philosophical Investigations*, where it designates the activities within which words acquire meaning: the meaning of a word is its use in a practice governed by shared rules. Although Wittgenstein was not writing about pedagogy, this idea provides a philosophical foundation for game-based vocabulary teaching. It implies that a word is not truly learned when it has been paired with a translation, but when the learner can take part in the activities in which the word is used – naming, requesting, describing, joking, disagreeing. Pedagogical language games are miniature practices in which target words *do* something, and so reproduce, in simplified form, the conditions in which meaning is made.

5. An Integrative Framework

The six theoretical strands overlap but emphasise different mechanisms. Taken together they suggest that games support vocabulary development through three linked pathways: a *social-interactional pathway* (support, negotiation, output), a *cognitive pathway* (involvement, depth, retrieval and repetition) and a *motivational pathway* (needs satisfaction, low anxiety, sustained engagement). The meaning-as-use principle underlies all three by locating vocabulary in purposeful activity. The framework is summarised in six propositions.

P1 (Meaningful use). Games promote deeper vocabulary knowledge when target words are necessary for achieving the game goal and are used, not merely recognised (Wittgenstein, 1953; Laufer & Hulstijn, 2001).

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P2 (Interaction and scaffolding). Games that create information gaps and collaborative roles generate negotiation of meaning, pushed output and peer scaffolding within learners' ZPD, supporting form–meaning mapping (Long, 1996; Swain, 1985; Vygotsky, 1978).

P3 (Involvement and depth). Vocabulary gains increase with the involvement load of the game: need, search and evaluation of word meaning and form (Hulstijn & Laufer, 2001; Craik & Lockhart, 1972).

P4 (Repetition, spacing and retrieval). Games that recycle target words in varied rounds over time and require retrieval improve retention more than single-session or recognition-only play (Cepeda et al., 2006; Roediger & Karpicke, 2006; Webb, 2007).

P5 (Motivation and affect). Games that satisfy needs for autonomy, competence and relatedness, and that keep challenge in balance with skill, increase willingness to engage and persist, and thereby the amount of vocabulary processing (Csikszentmihalyi, 1990; Ryan & Deci, 2000).

P6 (Load and fit). The effect of any of the above is reduced if game rules, media or competition overload working memory or conflict with learners' developmental needs; games must be simple, language-centred and age-appropriate (Eccles & Midgley, 1989; Sweller, 1988).

Table 1. From theory to game design to vocabulary outcome

Theoretical strand	Key mechanism	Game design feature	Vocabulary outcome
Sociocultural (Vygotsky)	Mediated interaction within ZPD	Team roles, peer hints, graduated clues	Meaning in use; independent control of words
Interactionist (Long, Swain)	Negotiation of meaning; pushed output	Information-gap, describe-and-guess games	Form–meaning mapping; productive use
Cognitive (Craik & Lockhart; Laufer & Hulstijn)	Depth and involvement load	Need to choose, justify and evaluate words	Depth of knowledge; retention
Memory research (Webb; Cepeda; Roediger)	Repetition, spacing, retrieval	Recurring words in varied rounds and rematches	Long-term retention
Motivational (Ryan & Deci; Csikszentmihalyi)	Needs satisfaction; flow	Choice, graded levels, cooperative goals	Persistence; time on task

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Theoretical strand	Key mechanism	Game design feature	Vocabulary outcome
Play and development (Piaget; Cook; Eccles & Midgley)	Rule-based play; stage–environment fit	Word-building, riddles, wordplay; age-suited formats	Engagement; attention to form
Meaning as use (Wittgenstein)	Words as moves in a practice	Role-plays, scenario games	Pragmatic and collocational knowledge

6. What the Empirical Evidence Can Support

Empirical studies of language games for vocabulary are broadly encouraging but heterogeneous. Early classroom reports described better recall and more positive attitudes when games were used for vocabulary presentation and revision (Huyen & Nga, 2003; Uberman, 1998), and a quasi-experimental study of online vocabulary games reported advantages over conventional activities (Yip & Kwan, 2006). A systematic review of gamification for second language learning found generally positive effects on learning outcomes and motivation, while noting methodological limitations in many of the included studies (Dehghanzadeh, Fardanesh, Hatami, Talaee & Noroozi, 2021).

Broader syntheses provide cautious support. A meta-analysis of serious games found that they outperformed conventional instruction in learning and retention but were not more motivating (Wouters, van Nimwegen, van Oostendorp & van der Spek, 2013). A meta-analysis of gamification reported small to moderate positive effects on cognitive, motivational and behavioural outcomes, with effects depending on how game elements were combined and on contextual factors (Sailer & Homner, 2020). Reviews of game-based learning stress that learning depends on the alignment of game mechanics with learning objectives, not on the presence of a game (Plass, Homer & Kinzer, 2015), and reviews in language education stress both opportunities and challenges of using games (Godwin-Jones, 2014; Reinhardt, 2019).

Three cautions follow. First, many studies are short, small-scale and compare games with weak baselines, so effects may be inflated by novelty. Second, much of the evidence concerns university students or adults; middle stage learners are under-represented. Third, outcomes are often measured by immediate recognition tests rather than delayed tests of productive and contextual

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knowledge. The framework in Section 5 is consistent with the evidence, but its propositions require direct testing with young adolescents.

7. Implications for Middle Stage Education

7.1 Design principles

The framework yields seven practical design principles for teachers and curriculum developers:

1. **Make the target words necessary.** Design the game so that learners cannot succeed without using or processing the target vocabulary (P1, P3).
2. **Build in need, search and evaluation.** Ask learners to select, justify, rank or correct words, not only to match them (P3).
3. **Create information gaps and team roles.** Different players hold different information, so that talk is needed (P2).
4. **Recycle words across rounds and weeks.** Plan a schedule of short return games using the same words in new contexts (P4).
5. **Balance challenge and support.** Offer graded levels, hint cards and sentence frames, and withdraw support as competence grows (P2, P5).
6. **Protect the learner's face.** Use team scoring, reward effort and improvement, and treat errors as part of the game (P5).
7. **Keep it simple and age-appropriate.** Use few rules, uncluttered media and a mix of concrete and increasingly abstract vocabulary (P6).

7.2 The teacher's role

The teacher is not a bystander. Before the game, the teacher selects target words, sets the learning purpose and models the rules. During it, the teacher monitors, scaffolds and notes errors. After it, a short debrief – recalling the words, reviewing mistakes, using the words in a sentence or short writing task – is what converts enjoyment into knowledge. This follows from the cognitive argument that learning depends on processing, not on play alone.

7.3 Assessment and alignment with curriculum

Assessment should include delayed tests of recall and use, not only same-day recognition, and should include observation of how learners use words in the game. In the Indian context,

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competency-based assessment under NEP 2020 and NCF-SE 2023 favours exactly such performance-oriented evidence. Games should be integrated with the prescribed vocabulary and textbook themes so that they support, rather than compete with, the syllabus.

7.4 Resource and equity considerations

Many of the most effective games – describe-and-guess, word-chain, bingo, card and board games – need only paper, board and imagination. Digital games can add feedback and spaced repetition, but depend on devices and connectivity that are unevenly available. Teachers should therefore choose game forms that fit their resources, and policy makers should avoid equating game-based learning with technology.

8. Limitations and Research Agenda

This review is narrative and selective, not exhaustive, and its framework is conceptual and untested. The theories drawn upon have different epistemological roots, and their combination is an argument for complementarity, not proof that they can be added together. The review is also limited to English as a foreign or second language and to the middle stage.

Future research should: (1) test the propositions experimentally, for instance by comparing games differing only in involvement load or information-gap structure; (2) use delayed post-tests of depth and productive knowledge; (3) study middle stage learners directly, including in under-resourced, large-class settings and with multilingual learners; (4) examine individual differences in response to competition and cooperation; (5) investigate teacher knowledge and professional development needed to design and debrief games; and (6) combine learning outcomes with process data such as classroom discourse and learner perceptions.

9. Conclusion

Language games are most convincingly understood not as a motivational add-on to vocabulary teaching, but as designed environments in which several well-established learning mechanisms can operate together: interaction within the zone of proximal development, negotiation and pushed output, deep and repeated processing of words, need-satisfying engagement, and the use of words as moves in a shared practice. The framework offered here explains why some games teach and others merely entertain, and gives teachers and researchers a common set of propositions and

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design principles. For middle stage education, the practical message is that the educational value of a game lies in how far it makes learners *use, think about and return to* words, and that careful design and teacher-led debriefing matter as much as the game itself.

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