



School Environment as an Ecological Space for Adolescent Identity Formation: A Critical Literature Review of Peer Interaction, Teacher Support, Extracurricular Engagement, and Digital Self-Expression

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ARTICLE INFO

Article history :

Received : 18/03/2026

Revised : 22/04/2026

Published : 25/05/2026



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Volume : 1

No. 1

Halaman : 73-86

Terbitan : Juni 2026

Terakreditasi -
berdasarkan Ristekdikti
No.

ABSTRAK

Adolescent identity formation is increasingly shaped by complex interactions between school climate, peer relationships, teacher support, extracurricular participation, family continuity, digital self-expression, and the physical school environment. This study aims to critically examine the school environment as an ecological space for adolescent identity formation. Using a systematic integrative literature review supported by thematic synthesis, this study analyzed recent international literature published between 2021 and 2026 on adolescent identity, school belonging, school climate, peer interaction, teacher support, extracurricular engagement, and digital identity. The review procedure followed transparent stages of literature identification, screening, eligibility assessment, data extraction, coding, thematic categorization, and conceptual synthesis. The findings reveal that adolescent identity formation is not determined by a single school factor, but by the interaction of seven interconnected dimensions: social interaction at school, peer relationships, family support and school continuity, teacher support, extracurricular engagement, social media and digital self-expression, and the physical school environment. Social interaction, peer relationships, and teacher support emerged as the most immediate relational mechanisms because they provide recognition, feedback, belonging, and role negotiation. Family-school continuity and extracurricular engagement strengthen identity stability and self-exploration, while digital self-expression and physical school conditions expand identity development into online and spatial contexts. The study contributes a conceptual ecological model that frames adolescent identity formation as a multidimensional process involving personal, social, academic, moral, and digital identities. Practically, the findings suggest that schools should develop integrated identity-supportive environments through inclusive peer cultures, responsive teachers, meaningful extracurricular programs, family collaboration, digital literacy, and safe, accessible school spaces.

Keywords: Adolescent identity formation; Digital self-expression; Peer interaction; School environment; Teacher support.

A. Introduction

Adolescence is widely recognized as a decisive developmental period in which individuals negotiate who they are, where they belong, and how they position themselves within social communities. Identity formation during this stage does not emerge as a purely internal psychological process, but develops through continuous interaction between personal experiences and the social environments surrounding adolescents. Recent studies on adolescent development emphasize that identity is shaped through maturation, daily experiences, social relationships, and transitions across educational and relational contexts (Branje et al., 2021; Branje, 2022). Within this developmental process, school occupies a particularly strategic position because adolescents spend a substantial part of their everyday lives in formal educational settings. Schools are not only institutions for academic instruction, but also social spaces where adolescents encounter norms, values, peer cultures, authority figures, and opportunities for self-expression. Therefore, understanding the school environment as an ecological space is essential for explaining how adolescents construct personal, social, academic, and digital dimensions of identity.

In contemporary educational contexts, the formation of adolescent identity has become increasingly complex due to changes in school culture, peer interaction, digital communication, and student well-being. Many adolescents experience identity uncertainty, social comparison, peer pressure, academic stress, and difficulty in developing a stable sense of belonging within school communities. Empirical evidence indicates that school belonging is closely associated with adolescents' psychological adjustment, emotional security, and long-term mental health outcomes (Allen et al., 2024). A positive school climate can strengthen students' sense of membership, while unsupportive relationships, unsafe school environments, and limited autonomy may weaken students' engagement and self-understanding (El Zaatari & Maalouf, 2022; Sakız, 2026). In this sense, the school environment functions as a developmental setting that either supports or disrupts adolescents' efforts to define themselves. The issue becomes more urgent when schools fail to recognize that identity formation is embedded in everyday social experiences rather than confined to formal curriculum content.

The urgency of studying school environments and adolescent identity is also linked to the growing recognition that students' psychosocial development affects their academic, emotional, and social functioning. Supportive teacher-student relationships, constructive peer interactions, meaningful feedback, and opportunities for participation are not merely supplementary aspects of schooling; they are central mechanisms through which adolescents develop confidence, agency, and a sense of personal direction. Recent research shows that perceived school climate influences adolescent emotional outcomes through school belonging and social adjustment processes (Chen et al., 2025). Similarly, perceived feedback and subjective well-being have been found to mediate students' sense of belonging within the school context (Li et al., 2024). These findings suggest that identity formation is closely tied to the quality of students' relational and emotional experiences at school. Consequently, schools need to be examined as ecological systems that integrate instructional, social, emotional, physical, and digital dimensions of adolescent development.

The importance of this topic is further strengthened by the expansion of adolescent identity into digital spaces. Social media has become a significant arena where adolescents present themselves, compare themselves with others, interact with peers, and construct symbolic versions of who they are. Recent reviews describe social media as a "digital social mirror" because it enables adolescents to explore self-presentation, social comparison, role models, and online audiences in ways that directly affect identity construction (Pérez-Torres, 2024). However, digital identity development may also expose adolescents to external validation, unrealistic self-representation, algorithmic pressure, and fragmented self-perception (Avci et al., 2024). Schools therefore have an important responsibility to provide digital literacy, ethical guidance, and supportive social environments that help adolescents integrate their offline and online identities. For this reason, the study of school environment and adolescent identity can no longer ignore digital self-expression as part of contemporary identity formation.

Previous studies have provided important evidence regarding the relationship between school climate, belonging, social relationships, and adolescent development. Branje et al. (2021) and Branje (2022) explain that adolescent identity develops through dynamic processes involving personal commitments, exploration, and relational experiences. De Moor et al. (2023) further show that identity development may change during school transitions, indicating that educational environments shape how adolescents negotiate continuity and change in their sense of self. Negru-Subtirica et al. (2024) highlight educational identity as a growing area of research because schooling provides structured experiences that influence adolescents' academic self-

understanding. In relation to school belonging, El Zaatari and Maalouf (2022) argue that Bronfenbrenner's bioecological theory offers a useful framework for explaining how teacher-student relationships, peer interaction, extracurricular activities, safety, and parental involvement contribute to students' belonging. Allen et al. (2022) also found that school-based interventions can enhance adolescent belonging when they promote student strengths and positive relationships. These studies collectively confirm that school environments matter, but they often focus on specific outcomes such as belonging, well-being, or academic achievement rather than synthesizing how multiple school-based factors contribute to adolescent identity formation.

Despite the growing body of literature, several limitations remain. First, studies on school climate and belonging often examine teacher support, peer support, school safety, or emotional outcomes as separate variables, leaving limited explanation of how these factors work together as an integrated ecological system (Chen et al., 2025; Sakız, 2026). Second, research on digital identity has expanded rapidly, but it is frequently discussed in relation to social media use rather than being connected to the broader school environment and educational support systems (Avci et al., 2024; Pérez-Torres, 2024). Third, studies on extracurricular participation show that organized activities can support social capital, peer connection, and youth development, yet their role in identity exploration is rarely integrated with teacher support, peer relations, and school culture in a single conceptual discussion (Boat et al., 2024; Feldman et al., 2021). Fourth, recent discussions of adolescent identity emphasize the need for multidimensional and contextual perspectives, but there remains a lack of critical literature reviews that position school as an ecological space where personal, social, academic, and digital identities intersect (Martin & Collie, 2025; Tong et al., 2024). This gap indicates the need for a more integrative review that does not merely describe the role of school environment, but explains the mechanisms through which school-based experiences shape adolescent identity.

Based on this gap, the present article aims to critically examine the school environment as an ecological space for adolescent identity formation, with particular attention to peer interaction, teacher support, extracurricular engagement, family-school continuity, physical school environment, and digital self-expression. The article seeks to synthesize recent literature to explain how these dimensions interact in shaping adolescents' personal, social, academic, and digital identities. Theoretically, this study contributes by positioning adolescent identity formation within an ecological framework that connects school climate, belonging, social interaction, and digital identity as interrelated developmental processes. Practically, the study offers insights for teachers, school leaders, counselors, and policymakers in designing school environments that support adolescents' self-understanding, confidence, social responsibility, and healthy digital participation. By integrating fragmented findings from previous research, this article proposes that adolescent identity formation should be understood not as an isolated psychological process, but as a relational and ecological outcome of everyday school experiences. Such a perspective is expected to strengthen educational practices that are more inclusive, supportive, and responsive to the developmental needs of adolescents in contemporary schooling.

B. Method

a. Research Design

This study employed a systematic integrative literature review design supported by thematic synthesis. This design was selected because the purpose of the study was not to measure the causal effect of one variable on another, but to critically synthesize previous empirical and theoretical findings on how the school environment contributes to adolescent identity formation. An integrative literature review is appropriate for studies that aim to combine findings from diverse methodological traditions and develop a broader conceptual understanding of a phenomenon (Kutcher et al., 2022; Snyder, 2024). In this study, the school environment was examined as an ecological space consisting of peer interaction, teacher support, extracurricular engagement, family-school continuity, physical school environment, and digital self-expression. The review procedure followed the logic of transparent evidence identification, selection, evaluation, and synthesis recommended in the PRISMA 2020 guideline, particularly in documenting the search strategy, eligibility criteria, screening process, and synthesis procedure (Page et al., 2021). Thematic synthesis was used because the reviewed studies contained conceptual and empirical findings that needed to be organized into meaningful themes rather than statistically pooled effect sizes. This approach is consistent with recent methodological guidance emphasizing that thematic analysis can be used to identify patterns, categories, and conceptual relationships across qualitative and mixed bodies of literature (Ahmed, 2025; Naeem et al., 2023).

b. Research Context, Location, and Time

This study was conducted as a literature-based inquiry rather than a field-based study in a single school or geographical location. The context of the study was international research on adolescent identity formation in school environments, with emphasis on secondary-level educational settings where identity exploration, peer affiliation, teacher-student relationships, and digital self-expression become developmentally salient. The literature search and selection process were designed to cover studies published between 2021 and 2026 in order to ensure that the review reflected recent developments in adolescent development, school climate, student belonging, and digital identity. The review process was planned in four stages: identification of relevant literature, screening of titles and abstracts, eligibility assessment through full-text reading, and thematic synthesis of included studies, following the reporting logic of systematic review procedures (Page et al., 2021). Because the original manuscript was conceptual and literature-based, the “location” of this study was defined as the body of peer-reviewed international literature rather than a physical research site. This decision was made to strengthen methodological consistency and avoid ambiguity between literature review and field observation.

c. Population, Sample, and Literature Sources

The population of this review consisted of peer-reviewed journal articles discussing adolescent identity formation, school environment, school climate, school belonging, peer interaction, teacher support, extracurricular engagement, physical school environment, and digital identity. The sample of the study was the final set of articles that met the inclusion and exclusion criteria after the screening process. Articles were eligible for inclusion when they met the following criteria: published between 2021 and 2026, written in English, published in peer-reviewed journals, indexed in Scopus or published by reputable international publishers, focused on adolescents or secondary school students, and directly related to at least one dimension of school environment or identity formation. Eligibility criteria were formulated to ensure that the selected studies were relevant, transparent, and aligned with the review question, as recommended in systematic review reporting standards (Page et al., 2021). Articles were excluded when they were not peer-reviewed, were published as opinion pieces, editorials, theses, non-academic reports, or conference abstracts without full papers, focused exclusively on early childhood or higher education students, or discussed school environment without any relevance to adolescent identity, belonging, self-concept, social development, or digital self-expression. The primary databases recommended for replication are Scopus, Web of Science, ERIC, ScienceDirect, SpringerLink, Taylor & Francis Online, SAGE Journals, and Wiley Online Library. Google Scholar may be used only as a supplementary search tool to trace additional references or locate full texts, not as the main database for determining the final article pool.

d. Search Strategy and Keywords

The literature search was designed using a combination of controlled and free-text keywords related to the core constructs of the study. The main search string may be formulated as follows: “adolescent identity” OR “identity formation” OR “self-concept” AND “school environment” OR “school climate” OR “school belonging” AND “peer interaction” OR “teacher support” OR “extracurricular activities” OR “digital identity” OR “social media self-expression.” The use of Boolean operators, database-specific search syntax, and clearly reported search strings is essential for improving the transparency and replicability of literature reviews (Page et al., 2021; Snyder, 2024). In Scopus, for example, the search can be limited to article title, abstract, and keywords using the command TITLE-ABS-KEY. The search can also be refined using subject areas such as education, psychology, social sciences, and adolescent development. To maintain transparency, the search date, database name, exact keywords, number of records retrieved, and number of records removed at each stage should be recorded in a review log. This procedure is important because transparent reporting enables other researchers to replicate the search and verify whether the selected articles are consistent with the purpose of the study.

e. Instruments and Data Extraction

The main instrument used in this review was a structured literature extraction sheet developed by the researchers. The extraction sheet contained several categories: author and year, country or research context, research design, participant characteristics, school-environment dimension, identity-related construct, key findings, theoretical framework, methodological quality, and relevance to the review question. Structured data extraction is commonly recommended in literature reviews because it helps researchers collect comparable

information from included studies and reduces the risk of selective interpretation (Kutcher et al., 2022; Snyder, 2024). The indicators in the extraction sheet were derived from the conceptual focus of the study, namely adolescent identity formation, peer interaction, teacher support, extracurricular engagement, family-school continuity, physical environment, and digital self-expression. The extraction sheet was used to ensure that all included studies were reviewed consistently and that the synthesis was not based on selective reading. In addition to the extraction sheet, a screening form was used to document whether each article met the inclusion and exclusion criteria. This instrument functioned as a methodological control so that decisions during article selection and data extraction remained traceable.

f. Validity and Reliability of the Review Procedure

The validity of the review process was strengthened through content validity, procedural transparency, and inter-reviewer agreement. Content validity was established by aligning the search terms, inclusion criteria, extraction categories, and synthesis themes with the research objective and the conceptual scope of the article. Procedural transparency was supported by adopting PRISMA 2020 reporting principles, which emphasize complete reporting of why the review was conducted, what methods were used, how studies were selected, and how findings were synthesized (Page et al., 2021). To improve reliability, at least two reviewers should independently screen the titles, abstracts, and full texts. Any disagreement between reviewers should be resolved through discussion, and when necessary, a third reviewer may be consulted. Inter-reviewer agreement can be calculated using Cohen's kappa or percentage agreement to show the consistency of screening decisions. The methodological quality of included articles may be appraised using a simplified quality appraisal rubric covering clarity of research purpose, appropriateness of design, transparency of data collection, adequacy of analysis, theoretical relevance, and contribution to the review topic. Quality appraisal is important in integrative reviews because such reviews often synthesize studies with different designs and therefore require explicit procedures to maintain trustworthiness (Kutcher et al., 2022; Snyder, 2024).

g. Data Collection Procedure

The data collection procedure was conducted in several stages. First, the researchers formulated the review question: How does the school environment function as an ecological space for adolescent identity formation? Second, the researchers identified relevant databases and developed search strings based on the main constructs of the study. Third, all retrieved records were exported to a reference manager such as Zotero, Mendeley, or EndNote, and duplicate records were removed. Fourth, titles and abstracts were screened against the inclusion and exclusion criteria. Fifth, full-text articles were assessed for eligibility, and articles that did not directly address the relationship between school environment and adolescent identity-related constructs were excluded. Sixth, data from the final articles were extracted using the structured extraction sheet. Seventh, the extracted findings were organized into initial codes, categories, and broader themes. This staged procedure follows systematic review principles that require researchers to document how evidence is identified, screened, selected, and synthesized (Page et al., 2021).

h. Data Analysis Technique

The data were analyzed using thematic synthesis. The analysis began with close reading of the included studies to identify relevant statements, concepts, and findings related to school environment and adolescent identity formation. The first stage involved open coding, in which meaningful segments of the articles were coded according to their conceptual content. The second stage involved grouping similar codes into descriptive categories, such as peer affiliation, teacher emotional support, school belonging, extracurricular participation, digital self-presentation, family-school continuity, and inclusive physical environment. The third stage involved developing analytical themes that explained how these categories interacted within an ecological understanding of adolescent identity formation. This procedure is consistent with thematic analysis and synthesis approaches that move from coding to categorization and then to conceptual interpretation (Ahmed, 2025; Naeem et al., 2023). The synthesis did not aim to calculate statistical effect sizes because the reviewed literature included diverse qualitative, quantitative, and conceptual studies. Instead, the analysis focused on conceptual integration, pattern identification, and the development of a coherent explanatory model.

i. Methodological Flow of the Review

The methodological flow of the study is presented to clarify the sequence of the review process and make the procedure easier to replicate. The flow begins with the formulation of the research focus, followed by literature searching, screening, eligibility assessment, quality appraisal, data extraction, thematic coding, Doi

synthesis, and conceptual model development. This flow is adapted from systematic review reporting principles and adjusted to the integrative nature of the present study (Page et al., 2021; Snyder, 2024).

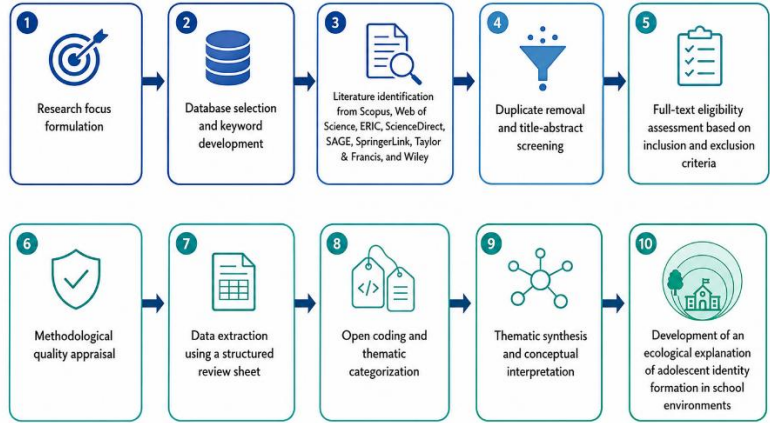


Figure 1. Methodological Flow of the Systematic Integrative Literature Review

The figure illustrates that the review was not conducted as an unsystematic collection of sources, but as a structured process moving from a clearly defined research focus to conceptual synthesis. Each stage contributes to methodological rigor: database selection ensures source quality, screening ensures relevance, quality appraisal strengthens trustworthiness, and thematic synthesis enables the development of an integrated explanation of school environment and adolescent identity formation.

j. Ethical Considerations

Because this study was based entirely on previously published literature, it did not involve direct interaction with human participants. Therefore, formal informed consent from students, teachers, or parents was not required. Nevertheless, the study followed academic ethical principles by citing all sources accurately, avoiding misrepresentation of previous findings, and ensuring that the synthesis was written through original interpretation rather than textual copying. Ethical writing in literature reviews requires researchers to acknowledge previous intellectual work, present findings fairly, and avoid selective or misleading interpretation (Snyder, 2024). The researchers also maintained transparency in article selection, data extraction, and interpretation to reduce bias. Any article included in the review was treated as intellectual work that must be acknowledged properly through APA-style citation. In addition, the review avoided unsupported claims and did not manipulate findings to fit a predetermined argument. These ethical considerations are essential for maintaining academic integrity and reducing the risk of plagiarism.

C. Result and Discussion

a. Result

The synthesis of the reviewed literature indicates that adolescent identity formation is shaped through a complex interaction between social, emotional, academic, moral, digital, and physical experiences within the school environment. The findings do not support the view that identity formation is influenced by a single dominant factor. Instead, adolescent identity develops through repeated experiences of interaction, recognition, participation, guidance, self-expression, and belonging in everyday school life. Based on the thematic analysis, seven major dimensions emerged as central to school-based identity formation: social interaction at school, peer relationships, family support and school continuity, teacher support, extracurricular engagement, social media and digital self-expression, and the physical school environment. These dimensions collectively show that school functions not only as a formal institution for academic learning, but also as an ecological space where adolescents construct their personal, social, academic, moral, and digital identities.

1. Thematic Synthesis of School-Environment Dimensions

The first major result of the review is the identification of seven interconnected dimensions of the school environment that contribute to adolescent identity formation. These dimensions were not treated as isolated factors, because the reviewed literature shows that adolescents experience school as an integrated social ecology. Peer relationships, teacher support, social interaction, extracurricular participation, family values, digital communication, and the physical environment interact with one another in shaping how adolescents understand themselves and their place within the school community. Table 1 presents the thematic synthesis

of these dimensions and their identity-related implications.

Table 1. Thematic Synthesis of School-Environment Dimensions in Adolescent Identity Formation

No.	School-environment dimension	Main developmental function	Identity-related implication
1	Social interaction at school	Provides daily relational experiences through communication, cooperation, and social participation	Strengthens social identity, interpersonal competence, and students' sense of belonging
2	Peer relationships	Offers acceptance, comparison, emotional support, and group affiliation	Shapes self-confidence, social adjustment, group identity, and vulnerability to peer pressure
3	Family support and school continuity	Provides moral foundation, emotional security, and initial value orientation	Supports identity stability, resilience, and consistency between home and school values
4	Teacher support	Provides academic guidance, moral modeling, motivation, and classroom structure	Builds academic identity, moral orientation, self-efficacy, and responsible behavior
5	Extracurricular engagement	Creates opportunities for exploration, leadership, creativity, and talent development	Encourages self-discovery, confidence, social participation, and personal achievement
6	Social media and digital self-expression	Enables adolescents to present themselves, communicate, and construct digital self-images	Expands identity formation into digital spaces while creating risks of comparison and identity distortion
7	Physical school environment	Provides safety, comfort, accessibility, and institutional belonging	Supports emotional security, pride in school membership, motivation, and holistic identity development

Table 1 shows that adolescent identity formation is embedded in both relational and structural aspects of schooling. The most direct dimensions are social interaction, peer relationships, and teacher support because these factors shape adolescents' daily interpersonal experiences in school. However, the broader ecology of identity formation is also supported by family-school continuity, extracurricular engagement, digital self-expression, and the physical quality of school facilities. This pattern confirms that schools should not be understood merely as academic spaces, but as developmental environments in which adolescents negotiate values, roles, self-confidence, social belonging, and future orientation.

2. Social Interaction as the Core Mechanism of Identity Formation

Social interaction emerged as the core mechanism through which adolescents develop identity within the school environment. School provides a structured social setting where adolescents communicate with peers, teachers, and other members of the educational community. Through these interactions, adolescents learn to cooperate, negotiate differences, follow social norms, express opinions, and recognize their position within a group. These repeated experiences gradually influence how they define themselves socially and emotionally.

The findings indicate that positive interaction at school strengthens students' sense of belonging and interpersonal competence. When adolescents experience supportive communication, respectful relationships, and inclusive participation, they are more likely to develop confidence and adaptive social behavior. In contrast, limited interaction, exclusion, or conflict may weaken students' sense of security and make identity formation more unstable. Therefore, social interaction functions not only as a communication process, but also as a developmental process through which adolescents test values, practice social roles, and construct a sense of self within the school community.

3. Peer Relationships as a Space of Belonging and Identity Negotiation

Peer relationships were found to be one of the strongest social influences in adolescent identity formation. During adolescence, peer groups become an important reference for behavior, appearance, language, interests, values, and self-perception. Positive peer relationships provide emotional support, recognition, and opportunities for adolescents to feel accepted by others. This acceptance strengthens self-confidence and helps adolescents develop a clearer sense of social identity.

However, the findings also show that peer influence has a dual role. Supportive peer groups can encourage achievement, social adjustment, and positive self-development, while negative peer pressure can lead to conformity, identity confusion, and risky behavior. Adolescents may change their behavior to gain acceptance even when group expectations conflict with personal or school values. For this reason, peer

relationships should be understood as spaces of identity negotiation. In these spaces, adolescents continuously balance self-expression, group belonging, moral judgment, and the desire for social recognition.

4. Family Support as a Foundational Context for School-Based Identity

Although this review focuses on the school environment, the findings show that family support remains an important foundation for adolescent identity development. Family is the earliest context in which adolescents learn values, discipline, emotional regulation, responsibility, and moral orientation. These early experiences influence how adolescents respond to school rules, teacher expectations, peer relationships, and social challenges. Adolescents who receive emotional support and constructive guidance from their families tend to show stronger identity stability and greater resilience in facing pressure at school.

The synthesis also indicates that family-school continuity plays an important role in maintaining consistency between home values and school experiences. When adolescents receive similar moral messages, emotional support, and behavioral expectations from both family and school, they are more likely to develop a stable and coherent identity. In contrast, inconsistency between family values, peer culture, and school norms may create confusion in the identity formation process. Therefore, adolescent identity formation should not be treated as a school-only process. It develops more effectively when family and school work together to support students' personal, moral, and social development.

5. Teacher Support in the Formation of Academic and Moral Identity

Teacher support was identified as a central factor in the development of adolescent academic and moral identity. Teachers do not only deliver academic content, but also act as role models, motivators, facilitators, and moral guides. Through their behavior, feedback, fairness, communication style, and classroom management, teachers influence how students perceive learning, discipline, responsibility, and their own academic ability. Positive teacher-student relationships can strengthen academic confidence and encourage students to participate more actively in learning.

The findings also indicate that teacher support contributes to moral identity formation. Adolescents often observe teachers' attitudes and use them as references for honesty, responsibility, empathy, respect, and discipline. A teacher who creates a supportive and respectful classroom climate helps students feel valued and capable. Conversely, an unsupportive or authoritarian classroom environment may weaken students' sense of belonging and reduce their motivation to engage positively. This result shows that teacher support has both academic and developmental significance. It shapes not only what adolescents learn, but also how they understand themselves as learners, social actors, and moral individuals.

6. Extracurricular Engagement as a Space for Self-Exploration

Extracurricular engagement emerged as an important space for self-exploration and self-realization. Unlike formal classroom learning, extracurricular activities provide opportunities for adolescents to explore interests, talents, leadership, creativity, teamwork, and social responsibility. Through sports, arts, student organizations, religious activities, community service, and clubs, adolescents can experience different roles and discover personal strengths that may not be visible in academic subjects alone.

The findings show that extracurricular participation supports identity formation by expanding adolescents' experiences beyond the classroom. Students who are actively involved in extracurricular activities may develop stronger confidence, communication skills, leadership capacity, and a sense of achievement. These experiences help adolescents construct a more positive and multidimensional understanding of themselves. However, the developmental value of extracurricular activities depends on accessibility, inclusiveness, guidance, and meaningful participation. When extracurricular programs are designed only as formal school activities without adequate mentoring, their contribution to identity development may be limited. Therefore, schools need to position extracurricular activities as intentional developmental spaces for self-discovery and social growth.

7. Social Media and the Expansion of Identity into Digital Spaces

The synthesis shows that social media has become a significant arena for adolescent identity formation. Adolescents use digital platforms to express themselves, communicate with peers, construct personal images, and seek recognition. In this sense, social media expands identity formation beyond the physical boundaries of the school. Digital interaction allows adolescents to experiment with self-presentation and to negotiate how they want to be seen by others.

Nevertheless, the findings also reveal several risks related to digital identity formation. Excessive social

media use may reduce face-to-face interaction, increase social comparison, strengthen dependence on external validation, and encourage unrealistic self-presentation. Adolescents may construct digital identities that do not fully reflect their real values, emotions, or lived experiences. This condition shows that digital identity is now an inseparable part of adolescent development. Schools therefore need to provide digital literacy, ethical communication guidance, and psychosocial support so that adolescents can manage online self-expression in healthier and more responsible ways.

8. Physical School Environment and Holistic Identity Development

The physical school environment was found to contribute to adolescent identity formation by shaping students' sense of safety, comfort, accessibility, and institutional belonging. A clean, safe, inclusive, and well-organized school environment can create emotional security and strengthen students' pride in being part of the school community. When adolescents feel physically and emotionally comfortable at school, they are more likely to participate in learning, interact with peers, and develop positive attitudes toward school life.

The findings also show that the physical environment has social and psychological implications. Accessible facilities are especially important for students with special needs because physical accessibility affects participation, self-acceptance, and equality. School facilities, classroom arrangement, learning spaces, and common areas influence how students experience school as a place of recognition and growth. Therefore, the physical environment should not be viewed only as an administrative or infrastructural issue. It is part of the broader ecological condition that supports or limits holistic identity development.

9. Dominant Patterns Emerging from the Literature

A deeper synthesis of the seven themes reveals three dominant patterns. First, identity formation is most directly shaped by relational experiences. Social interaction, peer relationships, and teacher support appear as the most immediate dimensions because they are experienced by adolescents every day. Through these relationships, adolescents receive acceptance, feedback, correction, recognition, and emotional support. These experiences influence whether students develop confidence, belonging, and positive self-understanding.

Second, identity formation is strengthened by continuity between school, family, and extracurricular spaces. Family support provides the moral and emotional foundation, while extracurricular activities provide opportunities for adolescents to explore interests and roles beyond academic learning. When family values, school culture, and extracurricular experiences are aligned, adolescents are more likely to develop a coherent and stable identity. This pattern suggests that school-based identity formation cannot be separated from the broader social ecology surrounding students.

Third, identity formation has expanded into digital and physical spaces. Social media creates new possibilities for self-expression, but also introduces risks of comparison and identity distortion. At the same time, the physical school environment affects students' sense of safety, participation, and belonging. These findings indicate that adolescent identity formation in contemporary schooling is no longer limited to classroom interaction. It is shaped by the interaction of offline relationships, online expression, institutional culture, and material conditions of the school environment.

Table 2. Dominant Patterns and Theoretical Interpretation of the Findings

Dominant pattern	Supporting dimensions	Theoretical interpretation	Implication for school practice
Relational experiences are the most immediate drivers of identity formation	Social interaction, peer relationships, teacher support	Identity develops through recognition, belonging, feedback, and role negotiation in daily relationships	Schools need to strengthen inclusive interaction, peer support, and teacher-student relationships
Identity formation requires continuity across developmental contexts	Family support, school culture, extracurricular engagement	Adolescents develop more stable identities when values and experiences across home, school, and activity spaces are consistent	Schools should build collaboration with families and provide meaningful extracurricular programs
Contemporary identity formation extends into digital and physical environments	Social media, digital self-expression, physical school environment	Identity is shaped through both online self-presentation and offline experiences of safety, accessibility, and belonging	Schools should integrate digital literacy and inclusive school-environment development

Table 2 strengthens the interpretation of the findings by showing that the seven themes do not stand alone. They form broader patterns that explain how adolescent identity is shaped in school environments. The first pattern emphasizes the importance of daily relational experiences. The second pattern highlights the need for consistency between family, school, and extracurricular contexts. The third pattern shows that identity development now occurs across both digital and physical environments. These three patterns provide the basis for the conceptual model presented in Figure 2.

10. Integrated Ecological Model of Adolescent Identity Formation

Based on the thematic synthesis, adolescent identity formation can be explained through an integrated ecological model. The model positions the school environment as a dynamic developmental space in which social, academic, emotional, moral, digital, and physical dimensions interact. Each dimension contributes differently, but their combined influence shapes how adolescents understand themselves, relate to others, and participate in school life.

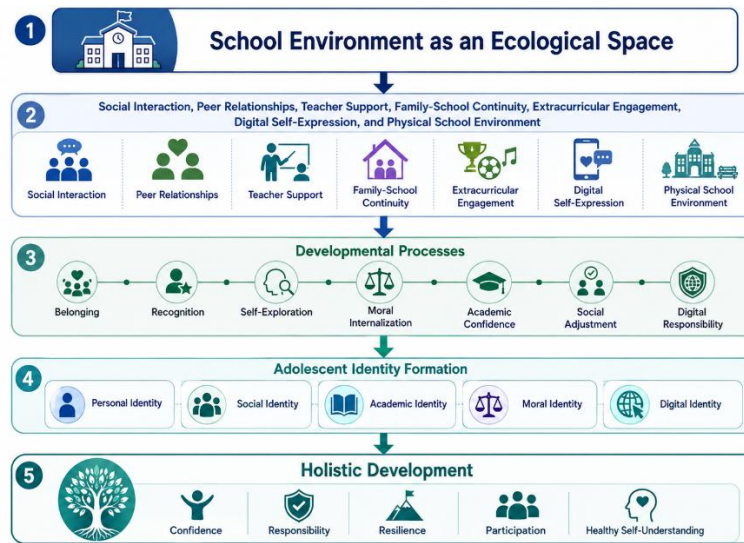


Figure 2. Integrated Ecological Model of Adolescent Identity Formation in School Environments

Figure 2 presents the conceptual synthesis generated from the review. The model explains that the school environment contributes to identity formation through several developmental processes. Social interaction and peer relationships mainly strengthen belonging, recognition, and social adjustment. Teacher support contributes to academic confidence and moral internalization. Family-school continuity supports stability and resilience. Extracurricular engagement provides opportunities for self-exploration and achievement. Digital self-expression expands identity formation into online spaces, while the physical school environment strengthens safety, comfort, and institutional belonging. Together, these dimensions show that adolescent identity formation is multidimensional and ecological rather than linear or single-factor.

11. Summary of Findings

The overall findings indicate that adolescent identity formation is a multidimensional process embedded in the everyday ecology of school life. Adolescents develop identity through repeated experiences of interaction, support, participation, recognition, and self-expression. Social interaction, peer relationships, and teacher support appear as the most direct factors because they shape students' daily relational experiences. Family support, extracurricular engagement, social media, and the physical school environment function as complementary dimensions that strengthen or weaken the identity formation process.

These findings show that a positive school environment should not be understood narrowly as a place for academic learning only. Rather, it should be understood as a developmental ecology that shapes adolescents' personal, social, academic, moral, and digital identities. Schools that provide supportive relationships, inclusive participation, ethical digital guidance, meaningful extracurricular opportunities, and safe physical spaces are more likely to help adolescents build confidence, responsibility, resilience, and healthy self-understanding. In contrast, schools that neglect peer dynamics, teacher-student relationships, extracurricular access, digital literacy, and physical inclusivity may unintentionally contribute to identity confusion, social withdrawal, or weak school belonging. Therefore, adolescent identity formation requires an integrated educational approach that connects classroom learning, social interaction, family collaboration,

extracurricular development, digital literacy, and inclusive school infrastructure.

b. Discussion

The findings of this review indicate that adolescent identity formation is best understood as an ecological process rather than as an individual psychological outcome that develops separately from school life. The central role of social interaction, peer relationships, teacher support, family-school continuity, extracurricular engagement, digital self-expression, and the physical school environment shows that identity is formed through repeated encounters between adolescents and their surrounding developmental contexts. This interpretation supports Bronfenbrenner's bioecological perspective, particularly the idea that development occurs through dynamic interactions among process, person, context, and time (El Zaatari & Maalouf, 2022). The present findings also align with Branje et al. (2021) and Branje (2022), who emphasize that adolescent identity develops through exploration, commitment, relational experience, and contextual change. However, this review extends previous identity-development literature by showing that the school environment should not be treated merely as a background context, but as an active ecological space where identity is negotiated through everyday educational experiences. The implication is that schools influence identity not only through curriculum, but also through the quality of relationships, the structure of participation, the emotional climate, and the symbolic meanings students attach to school membership.

The finding that social interaction, peer relationships, and teacher support are the most immediate drivers of identity formation suggests that adolescent identity is fundamentally relational. Adolescents do not simply define themselves through private reflection; they construct self-understanding through recognition, feedback, acceptance, correction, and comparison within daily school interactions. This supports social identity perspectives and contemporary studies on school belonging, which argue that students' sense of self is shaped by their perceived membership in valued social groups and educational communities (Allen et al., 2022; Allen et al., 2024). The result is also consistent with Chen et al. (2025), who found that perceived school climate influences adolescents' emotional outcomes through school belonging and social adjustment, and with Li et al. (2024), who reported that feedback and subjective well-being contribute to students' school belonging. Nevertheless, this review adds a critical nuance: relational experiences are not automatically developmental; they become identity-forming only when they provide recognition, safety, and meaningful participation. Negative peer pressure, exclusion, or authoritarian teacher-student relations may produce the opposite effect by intensifying conformity, insecurity, or identity confusion. Therefore, the practical meaning of this finding is that schools must intentionally design relational climates that transform everyday interaction into a source of positive identity development.

The finding that family-school continuity and extracurricular engagement strengthen adolescent identity formation demonstrates that school-based identity is not confined to classroom interaction. Adolescents develop more coherent identities when values, expectations, emotional support, and opportunities for participation are connected across family, school, and extracurricular settings. This result is consistent with the ecological interpretation of school belonging proposed by El Zaatari and Maalouf (2022), which places parental involvement, peer relationships, teacher-student interaction, school safety, and extracurricular activities within a shared developmental ecology. It also supports recent work on educational identity, which shows that schooling provides structured pathways through which adolescents interpret academic goals, future possibilities, and personal competence (Negru-Subtirica, 2024; De Moor et al., 2023). Studies on organized activities further suggest that extracurricular participation can strengthen social capital, peer connection, and developmental opportunities among youth (Boat et al., 2024; Feldman et al., 2021). However, the contribution of this review lies in showing that extracurricular activities should not be interpreted merely as additional school programs, but as identity laboratories where adolescents test roles, talents, leadership, and social responsibility. This means that family collaboration and extracurricular access are not peripheral issues; they are necessary conditions for building stable, multidimensional, and socially grounded adolescent identities.

The finding that adolescent identity now extends into digital and physical spaces broadens the theoretical understanding of identity formation in contemporary schooling. Digital self-expression allows adolescents to construct, display, and revise images of themselves in online environments, while the physical school environment shapes their sense of safety, belonging, and institutional recognition. This finding supports Pérez-Torres (2024), who describes social media as a digital social mirror through which adolescents engage in self-presentation, social comparison, role modeling, and interaction with online audiences. It is also in line with Avci et al. (2024), who argue that social media use has become deeply connected to adolescent identity

development, although it can also expose adolescents to unrealistic self-representation and dependence on external validation. At the same time, the role of the physical school environment reinforces the argument that identity is embodied and situated; students' self-understanding is shaped not only by interpersonal relationships, but also by whether the school space feels safe, inclusive, accessible, and meaningful. This review therefore modifies earlier school-environment discussions by integrating digital identity and physical belonging into the same ecological framework. The implication is that contemporary schools must combine digital literacy, psychosocial guidance, inclusive infrastructure, and ethical communication practices if they want to support healthy adolescent identity formation.

Overall, the study contributes a conceptual synthesis that positions adolescent identity formation as the outcome of interconnected relational, institutional, digital, and spatial processes within school environments. Previous studies have often examined school climate, belonging, teacher support, peer relationships, extracurricular participation, or digital identity as separate constructs, but this review integrates them into a single ecological explanation. In this respect, the study fills a gap in the literature by showing that adolescent identity is not produced by one dominant factor, but by the interaction of daily relational experiences, continuity across developmental contexts, and the expansion of identity into online and physical spaces. This argument is consistent with recent calls for more contextual and multidimensional perspectives in adolescent identity research (Martin & Collie, 2025; Tong et al., 2024). Theoretically, the review extends Bronfenbrenner's ecological logic by applying it specifically to identity formation in school environments rather than only to belonging or adjustment. Practically, the findings suggest that schools should move beyond fragmented interventions and develop integrated identity-supportive environments that include inclusive peer cultures, responsive teacher relationships, family engagement, meaningful extracurricular pathways, digital literacy, and safe physical spaces. Thus, the novelty of this study lies in reframing the school environment as an ecological identity-forming system, rather than as a collection of separate educational factors.

D. Conclusion

This study concludes that adolescent identity formation is a multidimensional and ecological process shaped by the interaction of relational, institutional, digital, and physical experiences within the school environment. The synthesis shows that social interaction, peer relationships, and teacher support function as the most immediate mechanisms because they provide adolescents with recognition, feedback, belonging, emotional security, and opportunities for role negotiation. At the same time, family-school continuity, extracurricular engagement, digital self-expression, and the physical school environment strengthen identity formation by expanding the contexts in which adolescents explore values, develop competence, express themselves, and construct a sense of personal and social meaning. These findings confirm that schools should not be understood merely as sites of academic instruction, but as developmental ecosystems that shape personal identity, social identity, academic identity, moral identity, and digital identity. The theoretical contribution of this study lies in reframing the school environment as an ecological identity-forming system, where school climate, belonging, peer culture, teacher support, extracurricular participation, family values, digital interaction, and physical accessibility operate as interconnected dimensions rather than separate educational factors.

Practically, the findings suggest that schools need to design integrated identity-supportive environments that combine inclusive peer cultures, responsive teacher-student relationships, meaningful extracurricular opportunities, family collaboration, digital literacy guidance, and safe physical spaces. Such an approach can help adolescents develop confidence, responsibility, resilience, participation, and healthy self-understanding in both offline and online contexts. This review also indicates that fragmented interventions are insufficient when schools aim to support adolescent development; instead, identity formation requires coordinated educational practices that connect classroom learning, psychosocial support, student participation, moral guidance, and digital responsibility. Although this study provides a critical synthesis of recent literature, its conclusions are limited by the nature of literature-based analysis and therefore do not claim direct empirical causality across school contexts. Future research should test the proposed ecological model through empirical studies involving adolescents, teachers, families, and school leaders across diverse educational settings. Longitudinal, mixed-methods, and cross-cultural studies are particularly needed to examine how school environments influence identity formation over time and how digital, relational, and physical dimensions interact in different sociocultural contexts.

E. Author Contributions Statement

Asmira Ardianti contributed to the conceptualization of the study, formulation of the research focus, organization of the manuscript structure, and final coordination of the writing process. Nurul Faizzah contributed to the development of the literature review framework, identification of relevant studies, and refinement of the theoretical background. Kiky Resky Amaliah contributed to the analysis of peer interaction and social relationship themes, as well as the synthesis of findings related to adolescent social identity formation. Alfira Fitri contributed to the analysis of teacher support, school climate, and academic identity formation. A Erliani Putri contributed to the discussion of family-school continuity and the interpretation of moral and emotional dimensions of adolescent identity. Tiara contributed to the analysis of extracurricular engagement and its role in self-exploration, leadership, and student participation. Jinan Parhana Saihid contributed to the analysis of digital self-expression, social media, and adolescent digital identity. Indriani Reski Aulia contributed to the analysis of the physical school environment, accessibility, and holistic identity development. Ayu Andira contributed to data extraction, thematic categorization, and organization of the results section. Alfrida Linda Saratu' contributed to manuscript editing, language refinement, citation checking, and formatting according to academic writing standards. Nadia Tasane contributed to the final review of the manuscript, verification of coherence across sections, and preparation of the article for submission. All authors read, reviewed, and approved the final version of the manuscript.

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