

An Analysis of the Intrinsic Psychological Mechanisms of Adolescent Smartphone Addiction from the Perspective of Self-Determination Theory

Jinjin Du ^a, Suqing Meng ^{*}

School of Education, Jiangnan University, Wuhan, Hubei, China

^{*} Corresponding author: Suqing Meng (Email: mmhds@163.com), ^a 1324396361@qq.com

Abstract: Adolescent smartphone addiction is usually discussed as a problem of excessive use or weak self-control. That explanation is incomplete because it says little about why the phone becomes so attractive in the first place. Drawing on Self-Determination Theory, this paper examines how unmet needs for competence, relatedness, and autonomy may push adolescents toward smartphone-based activities. In many schools, strong competition and narrow academic criteria make it difficult for students to experience steady progress or to have non-academic strengths recognized. Family conversations that center almost exclusively on grades can create a similar gap in emotional support and personal choice. Smartphone applications then offer quick, visible substitutes: games provide clear feedback, social platforms create a feeling of being connected, and digital entertainment lets users decide what to watch and when to stop. These rewards do not automatically produce addiction, but they can reinforce prolonged use when everyday life repeatedly fails to meet the same needs. On this basis, the paper argues for a coordinated family-school response. Parents can provide more room for choice, companionship, and recognition, while schools can broaden assessment and make campus relationships more supportive. The practical aim is not simply to take the phone away, but to make real-life activities sufficiently meaningful that adolescents no longer need the phone to carry so much psychological weight.

Keywords: Adolescents; Smartphone Addiction; Self-determination Theory.

1. Introduction

Smartphones are now part of ordinary adolescent life, yet the amount of time some students spend on them has become a concern for learning, relationships, sleep, and mental health. The issue is not only the number of hours. Many adolescents use the device mainly for short videos, games, and other highly stimulating forms of entertainment, so phone use can gradually displace study, rest, and face-to-face interaction. Research has linked these patterns with poorer learning efficiency and a range of physical and psychological complaints. [1-4]

Adolescents are especially responsive to novelty and immediate feedback because self-regulation is still developing. [5-8] It is therefore tempting to describe smartphone addiction as the result of “poor self-control” or an excessive desire for pleasure. Such labels, however, locate the whole problem inside the individual. They do not explain why the same student can regulate attention well in one setting and struggle in another. A fuller account has to consider what the young person is trying to obtain from the device—relief, recognition, stimulation, or contact with others.

Self-Determination Theory offers one useful way to make sense of this difference. The theory proposes that people function better when their needs for competence, relatedness, and autonomy are supported. When those needs are repeatedly frustrated, behaviour may become narrow, defensive, or difficult to control. [9] Many adolescents study in environments shaped by entrance-examination pressure and a single ranking system, [10] while family talk may remain focused on grades rather than feelings or interests. [11] Under these conditions, young people can lose everyday opportunities to feel capable, connected, and able to make

meaningful choices. [12]

This paper uses the three needs as a lens for tracing how smartphone use can become compensatory. It first considers the pressures that weaken need satisfaction in school and family life, then examines the particular features of games, social media, and digital entertainment that make them attractive substitutes. The final section translates the analysis into suggestions for families and schools. The argument is not that every heavy user is addicted, nor that smartphones are inherently harmful; rather, persistent overreliance becomes more understandable when virtual rewards are easier to obtain than comparable rewards in daily life. [13,14]

2. Causes of Adolescent Smartphone Addiction from the Perspective of Self-Determination Theory

Adolescents between 14 and 18 are still consolidating habits of self-regulation and are often highly responsive to new stimuli. [15] This developmental profile can increase their vulnerability to problematic phone use, but it does not by itself explain the pattern. From an SDT perspective, addiction-like use may grow out of a long period in which important psychological needs are not met in ordinary settings. [16] The phone then works as a readily available route to experiences that are missing elsewhere.

2.1. The Need for Competence and Smartphone-Based Compensation

In Self-Determination Theory, competence is the feeling that one can deal with challenges and make progress. [17] For many middle- and high-school students, however, competence is judged mainly through scores and class rank.

When the route to recognition is so narrow, a phone can become appealing because it offers other, faster ways to feel effective. [18]

2.1.1. How School Evaluation Weakens Competence

A single-track school environment can weaken competence in at least three connected ways. Students repeatedly compare their results with those of classmates; tasks may be difficult while feedback arrives late or only as a score; and abilities that do not fit the academic scale remain largely invisible. These are not isolated disappointments. When they occur week after week, students may begin to treat them as evidence that they are simply “not good at anything.”

In a ranking-centred system, most students cannot remain near the top for long. [19] A learner may work hard yet see little movement in the grade table, while constant comparison highlights the gap with higher-performing peers. [20] If teachers mainly comment on the final answer, the effort and small improvements made along the way receive little confirmation. The result can be a familiar cycle: low confidence reduces initiative, reduced initiative limits practice, and the next disappointing result seems to prove the original self-doubt. [21]

Academic performance also tends to stand in for overall worth. Skills in sport, music, design, humour, cooperation, or caring for others may matter greatly in daily life but remain difficult to demonstrate in a conventional test. [22] Without regular chances to see these abilities valued, adolescents have fewer concrete reminders that they can do something well. Their general sense of competence may therefore decline even when they possess clear strengths.

2.1.2. How Smartphone Use Restores a Sense of Competence

Digital entertainment supplies a different rhythm of challenge and response. A mobile game divides progress into visible stages, gives an immediate result after an action, and often adjusts difficulty so that the next goal remains reachable. [23] For a student who experiences school achievement as slow or uncertain, moving to the next level can feel like reliable evidence of ability. The attraction lies less in the game label than in the clarity of its feedback.

Social media and short-video platforms add another route to recognition. A drawing, joke, performance, or carefully edited clip—abilities that may receive little attention at school—can attract likes and comments within minutes. [24] Recommendation systems also make the experience feel personally fitted: the next item appears to match the user’s interests, which creates a temporary sense of being understood and in control. [25] These responses can restore confidence for a moment, but they require little sustained effort and may therefore encourage repeated checking rather than durable skill development. [26]

2.2. The Need for Relatedness and Smartphone-Based Belonging

Relatedness means more than being surrounded by people. It involves feeling accepted, understood, and securely connected to others. [27] Adolescents often seek this experience through peers, teachers, and family members, yet each setting can also contain barriers. When offline relationships feel judgemental, competitive, or emotionally unavailable, online interaction may appear to be the safer and more responsive option.

2.2.1. Gaps in Offline Relatedness

The main support networks around an adolescent—peers, teachers, and family—do not always provide the same quality of connection. Some students move through school and home feeling noticed mainly when they perform well or cause a problem. In that situation, belonging is uncertain, and the phone becomes a convenient place to look for a response.

Peer groups can become organised around cliques, exclusion, or academic comparison rather than mutual support. [28] Teacher–student relationships may also be shaped by labels such as “high achiever” and “low achiever,” which influence who receives attention and encouragement. [29, 30] At home, conversations that return again and again to homework and test scores leave little room to discuss fear, disappointment, or ordinary interests. [31] If these exchanges end in criticism or conflict, a young person may conclude that even family members do not really understand them. [32]

2.2.2. Online Spaces of Belonging

Online interaction changes the cost of entering a social space. A message, like, or comment can produce a quick sign of presence without the planning and risk involved in a face-to-face conversation. [33] Interest-based groups offer another advantage: people can meet around a game, fandom, or hobby before revealing much about themselves. For adolescents who feel peripheral in school, this kind of entry point can make belonging seem more attainable.

Communities organised around shared interests may provide recognition and emotional resonance that are missing offline. [34, 35] Asynchronous messaging and partial anonymity can also make it easier for socially anxious adolescents to participate. [36] Yet the same low-cost access creates pressure to remain available. Fear of missing a group conversation or a new post can turn an initially comforting connection into frequent checking and long periods of attachment to the phone. [37]

2.3. The Need for Autonomy and the Illusion of Control

Autonomy concerns the feeling that one’s actions are self-endorsed rather than imposed. [38] Adolescents do not expect to control every rule, but they do need some meaningful say over study choices, time, interests, and expression. When school and family routines leave almost no room for such choices, the smartphone can become one of the few places where personal preference is immediately respected.

2.3.1. Constraints on Autonomy in Daily Life

In decisions about academic pathways, extracurricular activities, and future plans, parents or teachers often take the lead. [39] The young person may be consulted, but not given real influence. Over time, this turns participation into compliance: the schedule is followed because it is prescribed, not because it has been personally accepted. A similar pattern appears in daily routines, where tightly packed timetables reduce opportunities to explore an interest or simply have private time.

Privacy can also be treated as something to be monitored “for the student’s own good.” [40,41] When opinions or emotions that differ from adult expectations are dismissed, adolescents learn that silence is less costly than honest expression. They may appear cooperative while feeling that their actual preferences have little place in family or school life. This gap between outward conformity and inner choice is an important part of the autonomy problem.

2.3.2. Virtual Control Through Smartphone Entertainment

Smartphones offer an immediate, if limited, experience of control. Users choose the content, decide how long to stay, and can leave an interaction without explaining themselves. [42, 43] They can also design a profile, avatar, or style of expression that is closer to an imagined self than to the identity assigned at school. [44] When pressure accumulates, an immersive game or video feed temporarily suspends outside demands and lets the user set the pace. [45] This feels like autonomy, but it is fragile: the more relief is obtained only through the device, the harder it becomes to practise choice and emotional regulation in ordinary life.

3. Coordinated Family–School Responses to Adolescent Smartphone Addiction

The three strands point to the same process. When competence, relatedness, and autonomy are repeatedly frustrated, smartphone activities provide quick substitutes that are easy to access and difficult to compete with. A student who feels unsuccessful, lonely, or controlled may therefore turn to the phone not simply to “waste time,” but to change an uncomfortable emotional state. At the same time, prolonged use removes time from study, sleep, and face-to-face relationships, which can deepen the original frustration. [45]

This is why effective intervention cannot stop at confiscating the device or setting a stricter timer. Rules may be necessary, but they do not replace the experience the adolescent was seeking. Families and schools need to make room for genuine choice, achievable progress, and dependable relationships. If real-life settings become more rewarding, the phone can return to being a tool rather than the main place where psychological needs are met.

3.1. Family-Level Interventions: Nurturing Psychological Needs

A family response should move from one-way control toward shared problem solving. The purpose is not to remove every boundary; it is to build everyday interactions in which adolescents can practise autonomy, notice their own competence, and feel accepted when they are struggling. Such a home environment reduces the need to rely on the phone as the quickest source of relief.

Autonomy grows when adolescents have real, age-appropriate choices. Parents might involve them in planning study time, deciding which activities to try, choosing how to spend part of the weekend, or negotiating reasonable screen periods. [46] The important point is that the choice has consequences and is discussed openly, rather than being a token question followed by an adult decision. When young people can see their preferences reflected in daily life, the phone loses some of its special status as the only controllable space.

Competence can be rebuilt through small opportunities to succeed and feedback that names what actually improved. [47] Parents can pay attention to musical, athletic, practical, creative, or interpersonal strengths instead of making every conversation an indirect report about grades. A teenager who cooks a meal, finishes a difficult piece of music, or helps a younger sibling is receiving evidence of ability that is grounded in the real world. Those experiences are more durable than a short burst of online approval.

Relatedness depends on how parents respond when things go badly. Unconditional acceptance does not mean ignoring missed homework or excessive use; it means discussing the behaviour without reducing the child to the behaviour. [48] Parents can ask what happened before a late-night session, listen before criticising, and protect regular periods of shared conversation or meals without screens. [49] Repeated experiences of being heard make the family a place to return to, rather than another source of pressure to escape.

The practical shift is from “parents versus the child and the phone” to a joint effort to make daily life workable. Prohibitions may be needed in particular situations, but they are unlikely to solve the problem on their own. When home life offers respected choices, visible progress, and dependable affection, adolescents have less reason to assign all three needs to the virtual world.

3.2. School-Level Interventions: Rebuilding Real-Life Attractiveness

Schools also need to make ordinary campus life more engaging, not merely make phone access more difficult. A supportive school can address the same three needs through the way it distributes decision-making, recognises progress, and organises relationships. This broader approach is especially important for students who do not receive enough support at home.

Students can exercise autonomy through limited but meaningful participation: helping to set class agreements, choosing among project topics, organising part of an extracurricular period, or selecting an after-school activity. [50] These practices do not remove adult responsibility. They show students that rules can be understood, discussed, and sometimes shaped with them, which is different from being treated only as objects of discipline.

Competence requires more than differentiated worksheets. Teachers can use several forms of evidence—drafts, improvement, collaboration, performance, and final products—so that progress is visible to students who are not top scorers. [51] Non-academic clubs, exhibitions, and practical projects provide additional places to demonstrate ability. The aim is not to lower standards, but to stop one score from becoming the sole answer to the question, “What can this student do?”

Relatedness is strengthened by consistent, respectful contact with teachers and by structured opportunities for peers to work together. A teacher who knows a student’s concerns and responds without humiliation can make the classroom feel safer. Group projects, class-building activities, and study trips create occasions for face-to-face cooperation rather than comparison alone. [52] Through repeated contact, students can form relationships that are more substantial than a stream of online reactions.

Schools should also identify students whose phone use is accompanied by withdrawal, sleep problems, or a sharp decline in functioning and offer individual support. A technical block or punishment may be part of a safety plan, but it cannot substitute for counselling, a trusted adult, or a chance to repair peer and family relationships. [53, 54] If restrictions are introduced without addressing those needs, the intervention may intensify the very loss of autonomy and connection that fuels overuse.

The desired outcome is a campus life in which students can participate, improve, and belong. When school provides credible experiences of competence, relatedness, and

autonomy, the smartphone is more likely to settle into an ordinary instrumental role—for communication, information, and leisure—instead of functioning as a refuge from an otherwise empty or hostile day.

4. Conclusion

Viewed through Self-Determination Theory, adolescent smartphone addiction is best understood as a relationship between the person and the environments in which the person is trying to live. Persistent shortages of competence, relatedness, and autonomy make the phone unusually valuable because it supplies quick substitutes for each need. This does not excuse harmful use, and it does not imply that every adolescent faces the same pathway. It does suggest that treatment based only on willpower or prohibition will often be too narrow. More lasting change is likely when families and schools improve the real-life experiences that the phone has been compensating for.

Future studies could follow adolescents over time to examine whether changes in need satisfaction precede changes in phone use, and whether different students respond to different forms of support. It would also be useful to test family–school programmes that match the intervention to the dominant unmet need rather than applying one standard package to everyone. In practice, closer cooperation between home and school remains central: adolescents are more likely to develop balanced media habits when the adults around them offer consistent expectations, room for choice, and relationships in which they can ask for help.

References

- [1] Fauzi, M. A. (2025). Smartphone addiction among children, adolescents and teenagers: Mapping emerging and future direction. *Entertainment Computing*, 55, 101025. <https://doi.org/10.1016/j.entcom.2025.101025>.
- [2] Jia, X., & Wang, C. (2023). Research on adolescent smartphone dependence and coping strategies. *Basic Education Research*, 6–9. (in Chinese)
- [3] Ricoy, M.-C., & Martínez-Carrera, S. (2021). Digital newspapers' perspectives about adolescents' smartphone use. *Sustainability*, 13(9), 5316. <https://doi.org/10.3390/su13095316>.
- [4] Minghelli, B. (2021). Adolescent neck pain: Association with the use of mobile telephone. *Annals of Medicine*, 53.
- [5] Schwartz, S. J., & Petrova, M. (2018). Fostering healthy identity development in adolescence. *Nature Human Behaviour*, 2(2), 110–111. <https://doi.org/10.1038/s41562-017-0283-2>.
- [6] Munno, D., Cappellin, F., Saroldi, M., Bechon, E., Guglielmucci, F., Passera, R., & Zullo, G. (2017). Internet addiction disorder: Personality characteristics and risk of pathological overuse in adolescents. *Psychiatry Research*, 248, 1–5. <https://doi.org/10.1016/j.psychres.2016.11.008>.
- [7] Luo, J., Cai, G., Zu, X., Huang, Q., & Cao, Q. (2025). Mobile phone addiction and negative emotions: An empirical study among adolescents in Jiangxi Province. *Frontiers in Psychiatry*, 16. <https://doi.org/10.3389/fpsy.2025.1541605>.
- [8] Du, G., & Wang, X. (2025). Fighting mobile phone addiction with forgiveness following interpersonal transgressions: A psychological compensation perspective. *Behavioral Sciences*, 15(8), 1209. <https://doi.org/10.3390/bs15081209>.
- [9] Mills, D. J., & Allen, J. J. (2020). Self-determination theory, internet gaming disorder, and the mediating role of self-control. *Computers in Human Behavior*, 105, 106209. <https://doi.org/10.1016/j.chb.2019.106209>.
- [10] Cai, J. L. (2023). Current situation and issues of education equity in China. *International Journal of New Developments in Education*, 5(1). <https://doi.org/10.25236/ijnde.2023.050111>.
- [11] Wu, H., & Zhao, L. (2022). The connotation, current status, and countermeasures of family education in the new era. *Journal of Hebei Normal University (Educational Science Edition)*, 24, 133–140. (in Chinese)
- [12] Semenova, L. M., et al. (2023). Impact of study load on psychophysiological status of high school students. *SHS Web of Conferences*, 164, 00091. <https://doi.org/10.1051/shsconf/202316400091>.
- [13] Körmendi, A., Brutóczki, Z., Végh, B. P., & Székely, R. (2016). Smartphone use can be addictive? A case report. *Journal of Behavioral Addictions*, 5(3), 548–552. <https://doi.org/10.1556/2006.5.2016.042>.
- [14] Stirnberg, J., Margraf, J., Precht, L.-M., & Brailovskaia, J. (2024). The relationship between reasons for smartphone use, addictive use tendencies, fear of missing out, depression, and life satisfaction: A qualitative and quantitative analysis. *Psychopathology*, 57(6), 359–368. <https://doi.org/10.1159/000537438>.
- [15] Lee, H., Kim, J. W., & Choi, T. Y. (2017). Risk factors for smartphone addiction in Korean adolescents: Smartphone use patterns. *Journal of Korean Medical Science*, 32(10), 1674. <https://doi.org/10.3346/jkms.2017.32.10.1674>.
- [16] Chai, X. (2022). The relationship between escape motivation and mobile phone addiction in high school students—A moderated mediation model. *Advances in Social Sciences*, 11, 3155–3164. (in Chinese)
- [17] Wei, Y. (2019). An investigation and analysis of basic psychological needs and mobile phone addiction among college students. *Advances in Psychology*, 9, 336. (in Chinese)
- [18] Yang, M. (2023). The current situation and reflections on general senior high school education under the new college entrance examination reform. *Zhejiang Examinations*, 28–31. (in Chinese)
- [19] Zhu, C. (2023). On the impact of current senior high school evaluation systems on the cultivation of students' innovative ability. In *Proceedings of the 3rd Innovation Education and Precision Management Summit Forum on Education Theory and Management (Session 1)* (pp. 977–980). Beijing, China. <https://doi.org/10.26914/c.cnkihy.2023.083361>.
- [20] Wu, J. (2021). A survey report on learning stress among senior high school students: Evidence from two high schools in Yixing City. *Jiangsu Education*, 40–44. (in Chinese)
- [21] Fang, D. (2025). The current status and improvement strategies of teachers' teaching evaluation competence in primary and secondary schools. *Modern Primary and Secondary Education*, 41, 91–94. (in Chinese)
- [22] Wang, L. (2025). An empirical analysis of the relationship between academic stress and mental health among senior high school students. In *Proceedings* (pp. 87–88). Shijiazhuang, Hebei, China. <https://doi.org/10.26914/c.cnkihy.2025.055645>.
- [23] Tan, X., Chen, S., Liu, C., Yang, W., & He, Y. (2025). The relationship between adolescents' gaming motivation and gaming addiction symptoms: A network analysis approach. *Sichuan Mental Health*, 38, 261–266. (in Chinese)
- [24] Feng, Y. (2025). The mechanism through which short-video addiction influences loneliness. *Taste & Classics*, 68–70. (in Chinese)
- [25] Liu, Y., & Zhang, W. (2023). Design and simulation of precision marketing recommendation system based on the

- NSSVD++ algorithm. *Neural Computing and Applications*, 37(13), 8139–8152. <https://doi.org/10.1007/s00521-023-08302-9>.
- [26] Wu, W. (2025). Research on the impact of social media algorithmic recommendation on adolescent development. *Hunan Institute of Science and Technology*. <https://doi.org/10.27906/d.cnki.gnghy.2025.000089>. (in Chinese)
- [27] Li, X., Zhu, X., & Li, W. (2010). Research progress on the need for belonging. *Psychological Exploration*, 30, 86–90. (in Chinese)
- [28] Chen, S., & Zhou, Z. (2007). The influence of peer relationships on adolescent mental health. *Journal of Educational Science of Hunan Normal University*, 76–79. (in Chinese)
- [29] Zhou, Y., & Dong, G. (2024). Challenges and responses in constructing high school teaching evaluation systems from the perspective of core competencies. *Jiaoshu Yuren*, 12–14. (in Chinese)
- [30] Quan, X. (2019). Analysis of the current situation and countermeasures of mental health education in senior high schools. *Examination Weekly*, 9–10. (in Chinese)
- [31] Zhao, H. (2020). Research on the goals of family education at the senior high school stage. *Science & Technology Information*, 18, 245, 247. (in Chinese)
- [32] Wang, M. (2023). A review on mobile phone addiction among teenagers. *Lecture Notes in Education Psychology and Public Media*, 24, 283–288. (in Chinese)
- [33] Tang, X., & Li, X. (2025). Research progress on the association between individual psychological factors and adolescent smartphone addiction. *Chinese Journal of School Health*, 46, 1055–1059. (in Chinese)
- [34] Zhou, M., Zhu, J., Zhou, Z., Zhou, H., & Ji, G. (2022). Cognitive bias toward the internet: The causes of adolescents' internet addiction under parents' self-affirmation consciousness. *Frontiers in Psychology*, 13. <https://doi.org/10.3389/fpsyg.2022.964107>.
- [35] Gao, W. (2025). “Participation–Identification”: Characteristics and development of youth daily online cultural practices. *Journal of Zhejiang Gongshang University*, 143–156. <https://doi.org/10.14134/j.cnki.cn33-1337/c.2025.03.014>. (in Chinese)
- [36] Sapacz, M., Rockman, G., & Clark, J. (2016). Are we addicted to our cell phones? *Computers in Human Behavior*, 57, 153–159. <https://doi.org/10.1016/j.chb.2015.12.004>.
- [37] Du, R. (2024). Why do we keep scrolling our phones?—The role of fear of missing out (FoMO). *Popular Psychology*, 44, 46. (in Chinese)
- [38] Shao, B., & Zhang, D. (2021). Development and cultivation of intrinsic learning motivation among primary and secondary school students from the perspective of self-determination theory. *Scientific Consulting (Education Research)*, 160–161. (in Chinese)
- [39] Liu, W. (2018). School well-being interventions based on the satisfaction of students' basic psychological needs. *Journal of South China Normal University (Social Science Edition)*, 104–111. (in Chinese)
- [40] Meng, B., Shen, H., Liu, H., Qu, S., & Luo, C. (2025). Sleep deprivation among senior high school students in Shanghai and its related influencing factors. *Chinese Journal of School Doctor*, 39, 661–665. (in Chinese)
- [41] Shen, C. (2024). Influencing factors and coping strategies of adolescent stress. *Academy*, 17, 72–74. (in Chinese)
- [42] Zhang, X., Wu, Y., & Liu, S. (2019). Exploring short-form video application addiction: Socio-technical and attachment perspectives. *Telematics and Informatics*, 42, 101243. <https://doi.org/10.1016/j.tele.2019.101243>.
- [43] Liao, M. (2024). Analysis of the causes, psychological mechanisms, and coping strategies of short video addiction in China. *Frontiers in Psychology*, 15. <https://doi.org/10.3389/fpsyg.2024.1352785>.
- [44] Gu, Y., & Zhou, H. (2025). Time control, behavioral formation, and adolescent online game addiction: A case study of role-playing games. *Science Communication*, 17, 89–95. (in Chinese)
- [45] Li, X. (2025). Cultivating digital literacy to reduce the harm of excessive smartphone use among adolescents. *Chinese Journal of School Health*, 46, 609–613, 618. (in Chinese)
- [46] Wang, K., et al. (2025). Interaction mechanisms between family ecosystems and adolescent psychosocial development: An empirical study from a sociological perspective. *Advances in Psychology*, 15, 196. (in Chinese)
- [47] Guo, Y. (2023). The impact of family education on adolescent mental health. *Advances in Psychology*, 13, 1496. (in Chinese)
- [48] Yang, H.-M. (2025). The mediating role of family communication in the relationship between academic achievement pressure and problematic smartphone use among Korean early adolescents. *Children*, 12(5). <https://doi.org/10.3390/children12050780>.
- [49] Dai, Y. (2025). Rural adolescents trapped behind screens: The roots of internet addiction and pathways to intervention. *Advances in Psychology*, 15, 137. (in Chinese)
- [50] Zhou, Y. (2025). Research on the causes and governance strategies of adolescent internet addiction. *Advances in Social Sciences*, 14, 770. (in Chinese)
- [51] Luo, Z. (2025). From “score supremacy” to “diversified evaluation”: The transformation and implementation pathways of educational evaluation in the context of building an education-strong nation. *Educational Science Research*, 58–66. (in Chinese)
- [52] Zhang, C., et al. (2022). School belonging and adolescent smartphone dependence: The mediating effect of learning anxiety and the moderating effect of peer relationships. *Psychological Development and Education*, 38, 848–858. (in Chinese)
- [53] Muro, J. H., Stulmaker, H., & Rose, K. K. (2012). Coaching techniques and play therapy responses: A new communication pattern. *Strategies*, 25(6), 12–15. <https://doi.org/10.1080/08924562.2012.10590966>.
- [54] Kovacevic Lepojevic, M., Trajkovic, M., Mijatovic, L., Popovic-Citic, B., Bukvic, L., Kovacevic, M., Parausic Marinkovic, A., & Radulovic, M. (2024). The relationship between teachers' disciplinary practices and school bullying and students' satisfaction with school: The moderated mediation effects of sex and school belonging. *PLOS ONE*, 19(5), e0303466. <https://doi.org/10.1371/journal.pone.0303466>.