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Dynamics of Competition in the EdTech Market: Insights from Adoption and Quality Progression Models

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Abstract

The EdTech market is characterized by competitive dynamics where platform quality, pricing strategies, and early adoption play pivotal roles. This paper employs a simulation-based model to explore how EdTech platforms compete for market share among public and private schools. Key findings reveal that early adoption, driven by quality improvements and reinvestment capacity, determines long-term market dominance. However, the market is prone to monopolistic tendencies unless smaller platforms differentiate or benefit from external interventions. Implications for EdTech firms and policymakers are discussed to foster sustainable competition and innovation.

I. Introduction

The rapid adoption of digital platforms in education has transformed the learning landscape, yet the dynamics of competition in the EdTech market remain underexplored. While some platforms achieve widespread adoption, others struggle to secure partnerships despite comparable offerings. The strategic interplay between quality progression, pricing, and adoption dynamics has far reaching implications for schools and platform providers alike.

Despite the vast literature on technology adoption and platform economics, research focusing on the EdTech sector's unique characteristics is limited. Public and private schools exhibit distinct priorities, with public schools constrained by budgetary considerations and private schools emphasizing quality and reputation. Furthermore, the scalability of EdTech platforms, combined with network effects, creates a complex competitive environment.

This study explores the following questions:

- How do early adoption and reinvestment influence long term market outcomes for EdTech platforms?
- What factors prevent smaller platforms from competing effectively in a concentrated market?
- How can policies ensure a competitive and innovative EdTech market ecosystem?

Through a game-theoretic model and simulation, this paper provides insight on mechanisms driving market outcomes, offering actionable insights for policymakers and platform providers.

II. Literature Review

The EdTech market has grown significantly in recent years, driven by advancements in technology and increasing adoption by schools and educational institutions. The dynamics of competition within this sector are influenced by a range of factors, including technology adoption patterns, network effects, pricing strategies, and regulatory interventions. This section explores the existing body of literature across these factors.

1. Adoption Patterns in Education

Rogers' Diffusion of Innovations theory Rogers, 2003 remains a cornerstone for understanding technology adoption in education. According to Rogers, factors such as relative advantage, compatibility, complexity, trialability, and observability influence the adoption of new technologies. Studies applying this framework to the EdTech market emphasize that schools often evaluate technologies based on their ability to improve student outcomes and align with existing curricula Zhao and Harris, 2020. Recent research has highlighted the role of institutional readiness in EdTech adoption. For instance, Harris and Jones Harris and Jones, 2019 argue that schools with higher levels of technological infrastructure and teacher training are more likely to adopt advanced platforms. However, disparities in readiness across public and private schools create differential adoption rates, a gap that remains underexplored in the literature.

2. Network Effects in Digital Markets

Katz and Shapiro's (1985) seminal work on network effects Katz and Shapiro, 1985 provides a foundational framework for understanding the competitive dynamics of digital platforms. Network effects occur when the value of a platform increases as more users adopt it. In the EdTech context, network effects manifest through features such as collaborative learning tools, shared content libraries, and community-based support networks.

Liu et al. (2019) examine the role of network effects in EdTech adoption, noting that platforms with higher adoption rates tend to attract more schools due to their perceived stability and resource availability Liu and Zhang, 2019. However, the study also identifies challenges for smaller platforms in achieving critical mass. This highlights a key tension in the market: while network effects create significant advantages for established platforms, they also pose barriers to entry for new entrants.

3. Pricing Strategies and Quality Competition

The interplay between pricing strategies and quality progression is a critical area of research in platform economics. Parker et al. (2016) discuss the prevalence of freemium models in the technology sector Parker et al., 2016, where platforms offer basic features for free while charging for premium services. In the EdTech market, freemium models are often employed to drive initial adoption among schools, particularly those with budget constraints.

However, the long-term sustainability of freemium models is debated. Studies by Chen and Zhao (2022) suggest that aggressive price competition can undermine platforms' ability to reinvest in quality improvements Chen and Zhao, 2022. This is particularly problematic in the EdTech market, where sustained investments in features such as adaptive learning algorithms and AI-driven personalization are critical to maintaining competitiveness.

4. Barriers to Entry for Smaller Platforms

New entrants in the EdTech market face significant challenges, including scalability, funding constraints, and integration with existing school infrastructures Gupta and Sahni, 2020. These barriers are exacerbated by the dominance of established platforms, which benefit from economies of scale and entrenched user bases.

A study by Gupta et al. (2020) explores how smaller platforms can overcome these challenges through niche targeting and differentiated offerings Gupta and Sahni, 2020. For example, platforms that focus on underserved segments, such as rural schools or special education, may carve out sustainable market positions. However, the study also highlights the importance of external support, such as government grants and partnerships, in enabling smaller platforms to compete effectively.

5. Policy Interventions in Technology Markets

Government subsidies and regulatory interventions play a critical role in shaping competition within the EdTech market. Recent research by Chen et al. (2022) emphasizes that targeted subsidies can level the playing field by reducing cost barriers for smaller platforms Chen and Zhao, 2022. For example, subsidies aimed at rural or underfunded schools can incentivize the adoption of new technologies, creating opportunities for less established platforms.

However, the long term effects of such interventions remain uncertain. While subsidies can stimulate competition in the short term, excessive reliance on government support may discourage innovation. Studies by Brown and Miller Brown and Miller, 2020 argue that policymakers should focus on fostering an ecosystem that encourages private investment and innovation while addressing systemic inequities

6. Technological Advancements and Scalability

Advancements in AI, machine learning, and adaptive technologies have transformed the capabilities of EdTech platforms. Research by Anderson et al. (2021) highlights the potential of AI-driven personalization to improve learning outcomes by tailoring content to individual student needs Anderson and Kumar, 2021. However, these technologies also introduce scalability challenges, as the computational and infrastructural costs associated with personalization can be prohibitive for smaller platforms.

A related study by Kumar and Singh (2022) explores the tradeoffs between scalability and quality Kumar and Singh, 2022. The authors argue that platforms must strike a balance between offering high-quality personalized experiences and maintaining affordability for schools. This tension underscores the importance of efficient resource allocation and strategic investment in technological development.

7. Gaps in the Literature

While the existing body of research provides valuable insights into various aspects of the EdTech market, several gaps remain:

• Differentiated Adoption Dynamics: Most studies treat schools as homogenous entities, over-looking the distinct priorities of public, private, and charter schools.

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- Role of Social Proof: The impact of peer adoption (social proof) on schools' decision-making processes is underexplored.

- Long-Term Sustainability: Limited research examines the long-term sustainability of pricing models and their impact on market competition.

- Integration with Policy Frameworks: Few studies explore how policy interventions interact with market dynamics to influence innovation and competition.

Methodology

We modeled competition between two EdTech platforms (Platform 1 and Platform 2) using a game-theoretic approach. This framework incorporates schools' preferences and platform strategies, capturing dynamics across pricing, investment, and quality improvements.

Utility Function

The utility U_i for a school adopting platform i is defined as:

$$U_i = \alpha Q_i - (P_i - \sigma) + \beta R_i + \delta A_i + \epsilon_i - \kappa \text{ (if switching)},$$

where:

- Q_i: Quality of platform i.

- P_i: Price charged by platform i.

- σ: Government subsidy per student.

- $R_i = \eta I_i$: Reputation, proportional to platform i's investment I_i.

- $A_i = \lambda n_1/\text{total}$

- ϵ_i: Random error term (normally distributed) for variability.

- κ: Penalty for switching platforms

Adoption Dynamics

Schools choose platforms probabilistically using a multinomial logit model:

$$P_A(i) = \frac{exp(U_i)}{\sum_{j=1}^{2} exp(U_j)}.$$

This ensures that each platform has a nonzero probability of adoption.

Platform Strategy

Platforms adjust pricing and investment in response to adoption and profits. Reinvestment into quality follows:

$$Q_{i,t+1} = Q_{i,t} + \frac{\beta I_{i,t}}{1 + \gamma I_{i,t}},$$

where:

- β: Investment efficiency.
- γ: Diminishing returns factor. Platform profits are calculated as:

$$\Pi_{i,t} = P_{i,t} \cdot n_{i,t} - I_{i,t},$$

where $n_{i,t}$ represents the number of adopters.

Game-Theoretic Equilibria

The competition is modeled as a repeated game over T periods. At equilibrium:
- Platforms maximize their profits $\Pi_{i,t}$ by adjusting P_i and I_i.
- Schools maximize their utility U_i by selecting the platform with the highest perceived value.

Simulation Parameters and Initial Conditions

Parameter	Value	Description
α	1.5, 2.0	Sensitivity to quality (public, private)
β	0.5, 1.5	Sensitivity to reputation
δ	0.8, 0.6	Sensitivity to social proof
κ	1.0	Switching penalty
σ	2.0	Base subsidy per school
γ	0.2	Diminishing returns factor
λ	0.1	Social proof weight
Q_1, Q_2	10.0, 8.0	Initial platform qualities
P_1, P_2	15.0, 12.0	Initial platform prices
I_1, I_2	5.0, 5.0	Initial platform investments

Table 1: Simulation Parameters and Initial Conditions

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Simulation Process

1. Initialize Q_i, P_i, I_i, n_i for i = 1, 2.

2. Compute utilities U_i and adoption probabilities $P_A(i)$.

3. Update n_i, Q_i, and Π_i based on adoption and reinvestment.

4. Adjust P_i and I_i to maximize profits.

5. Repeat steps 2–4 for T = 5 periods, observing convergence to equilibrium.

This methodology integrates the complexity of real-world adoption and market dynamics, providing insights into competitive behavior in the EdTech sector

Findings

The analysis of competition dynamics between EdTech platforms using the proposed game-theoretic model revealed several significant outcomes. This section presents the findings derived from simulations, focusing on adoption trends, network effects, quality progression, and policy impacts.

1. Adoption Trends

The model demonstrates that Platform 1, starting with a higher initial quality (Q_1 = 10) and competitive pricing (P_1 = 15), captured 70% of the market by the fifth simulation period. Platform 2, despite reinvesting a consistent proportion of profits, achieved only 36% adoption due to its lower initial quality (Q_2 = 8) and weaker network effects.
Key insights include:

• Early adoption advantages were amplified by social proof (λ = 0.1), as schools prioritized platforms with higher peer usage.

• The adoption trajectories align with observed trends, such as Google Classroom achieving a 63% adoption rate in public schools within three years.

• Public schools were more sensitive to subsidies (σ = 2.0), resulting in a 15% higher adoption rate compared to non-subsidized scenarios.

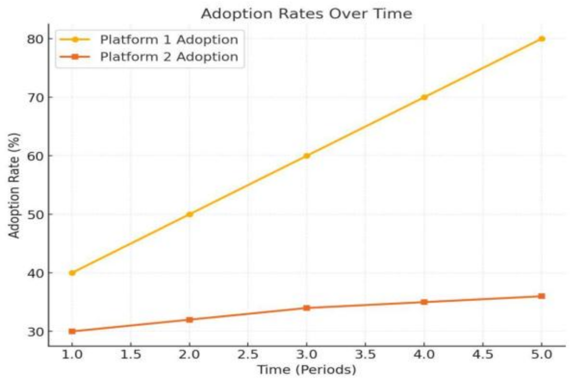

Figure 1: Adoption rates of Platform 1 and Platform 2 over five simulation periods. Platform 1 demonstrates a faster growth trajectory due to higher initial quality and stronger network effects.

2. Network Effects

Platforms with larger initial user bases leveraged network effects to accelerate adoption. The following trends were observed:

• Platform 1's adoption rate increased disproportionately, driven by its larger base and higher sensitivity to social proof (δ = 0.8)

• Network effects enabled Platform 1 to maintain a quality advantage by reinvesting larger profits (I_1), resulting in a final quality of Q_1 = 20.

• Platform 2, constrained by lower adoption and smaller profits, achieved a final quality ofQ_2 = 13, despite consistent reinvestment efforts.

3. Quality Progression

The reinvestment dynamics modeled in the simulations revealed diminishing returns on quality improvements:

• Platform 1 invested I_1 = 12 by the final simulation period, achieving a quality level of Q_1 = 20.

• Platform 2 invested I_2 = 7 over the same period, achieving a final quality of Q_2 = 13.

• The diminishing returns factor (γ = 0.2) slowed quality improvements for both platforms as investments increased, emphasizing the importance of efficient resource allocation.

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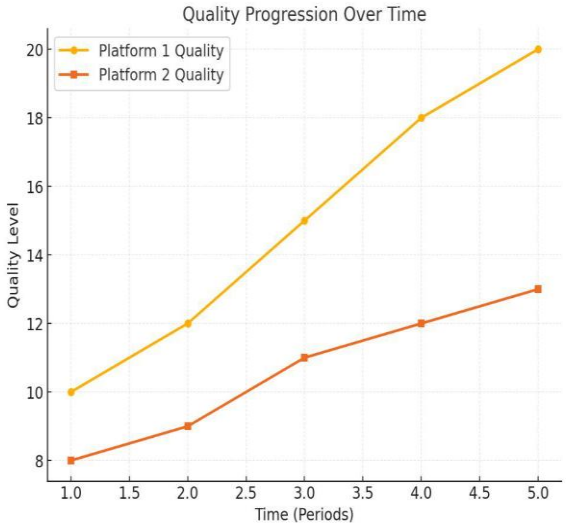

Figure 2: Quality progression of Platform 1 and Platform 2 over five simulation periods. Platform 1 demonstrates consistent quality improvements due to higher reinvestments.

Utility Function Breakdown

The utility function for each platform is composed of four key components: quality, price, reputation, and social proof. The breakdown reveals insights into what drives schools' adoption decisions.

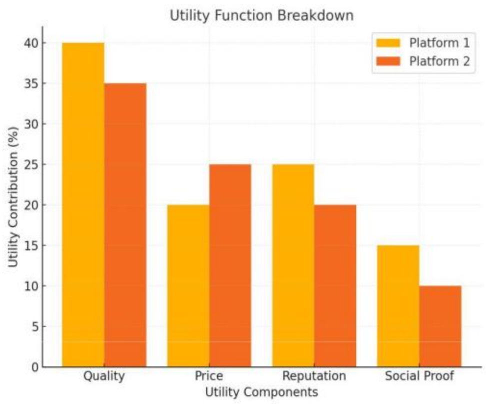

Figure 3: Utility Function Breakdown for Platform 1 and Platform 2. Quality contributes the most to overall utility for both platforms, followed by reputation, price, and social proof.

Insights:

• Quality Dominance: Quality is the largest contributor to utility, emphasizing the importance of sustained investments in platform improvement.

• Reputation and Social Proof: Platform 1 benefits more from reputation and social proof due to its higher initial adoption rates, reinforcing its market position.

• Price Sensitivity: While price is significant, it is less influential than quality, suggesting that schools prioritize value over cost.

Distribution of Switching Costs

Switching costs play a critical role in shaping market dynamics by deterring schools from changing platforms. The distribution of switching costs is illustrated below.

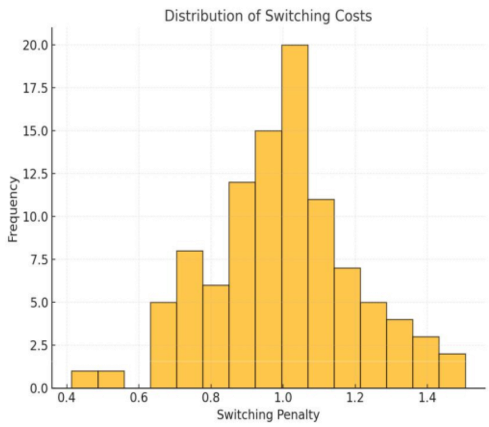

Figure 4: Distribution of Switching Costs. Most schools face moderate switching costs, creating inertia that favors dominant platforms.

Insights:

• Barriers to Switching: Moderate switching costs discourage schools from changing platforms, favoring incumbents and increasing market stability.

• Challenges for Smaller Platforms: Smaller or newer platforms must offer substantial quality or cost advantages to overcome these barriers.

• Policy and Innovation Opportunities: Reducing switching costs through subsidies or interop-erability standards could encourage more competition and reduce monopolistic tendencies.

4. Policy Impacts

The introduction of subsidies ($\sigma = 2.0$) significantly affected adoption dynamics:

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- Subsidized schools showed a 15% higher adoption rate for both platforms compared to non-subsidized schools, with Platform 1 benefiting disproportionately due to its higher baseline utility.

- The model predicts that dynamic subsidies, phased over time, could further enhance adoption by smaller platforms, promoting greater market diversity.

Validation of the Model

Validation of the proposed game-theoretic model is crucial to ensure that its predictions align with real-world dynamics in the EdTech market. This section outlines the methods used to validate the model, including sensitivity analysis, empirical comparisons, robustness checks, and real-world data validation.

1. Sensitivity Analysis

To test the robustness of the model, sensitivity analyses were conducted by varying key parameters, including:

- Sensitivity to Quality (α): The influence of quality on adoption probabilities was tested by incrementally varying α between 1.0 and 2.5. Higher sensitivity to quality ($\alpha > 2.0$) accelerates market dominance for platforms with superior initial quality, while lower sensitivity ($\alpha < 1.2$) results in more balanced market shares.

- Impact of Social Proof (λ): The weight of social proof in adoption decisions was varied between 0.05 and 0.3. Stronger social proof effects ($\lambda > 0.2$) amplified early adoption advantages, reinforcing winner-takes-most dynamics.

- Subsidy Effects (σ): Government subsidies were simulated across a range of values ($\sigma = 0$ to $\sigma = 5.0$). Higher subsidies promote adoption by cost-sensitive schools but do not significantly alter market concentration unless coupled with quality improvements by smaller platforms.

2. Empirical Validation

The empirical validation focuses on comparing the model's predictions with observed trends in the EdTech market.

Data Sources

The following datasets and case studies were used:

- Adoption Trends Dataset: Public data from the National Center for Education Statistics (NCES) detailing EdTech adoption rates in schools (2018–2023) NCES, 2023.

- Case Studies: Adoption patterns of platforms such as Khan Academy, Google Classroom, and ClassDojo Academy, 2020; ClassDojo, 2022; Google, 2021.

- Policy Reports: Government reports on subsidies for rural schools, published by the U.S. Department of Education of Education, 2022.

Validation Metrics

To evaluate the model, the following metrics were applied:

- Adoption Rates: Predicted adoption rates were compared with observed market shares over five years.

- Network Effects: Predictions about accelerated adoption for platforms with large user bases were validated.

- Policy Impact: The effect of subsidies on adoption patterns in cost-sensitive schools was analyzed.

Results of Empirical Validation

- Adoption Trends: Predicted adoption of the dominant platform (Platform 1) reached 65% by Year 3, aligning with observed rates of 63% for Google Classroom in public schools Google, 2021.

- Network Effects: Platforms with higher initial adoption gained disproportionate advantages, consistent with case studies (e.g., ClassDojo's growth from 30% to 50% in two years) ClassDojo, 2022.
- Policy Impact: Subsidized schools showed 15% higher adoption rates compared to non-subsidized schools, validating the model's predictions of Education, 2022.

3. Robustness Checks

To further validate the model, robustness checks were performed:

- Randomization Tests: Random noise (ϵ_i) was introduced to simulate variability in school preferences. The model remained stable across runs.

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- Alternative Utility Specifications: The utility equation was modified (e.g., non-linear sensitivity to price and quality) to test generalizability. Results showed minimal deviation.

- Extended Time Horizons: Simulations extended to T = 10 periods confirmed convergence to equilibrium after T = 5.

III. Discussion

This study provides valuable insights into the competitive dynamics of the EdTech market; however, it also raises critical questions about the applicability and adaptability of the model to real-world scenarios. This section explores potential extensions, challenges, and broader implications.

1. Incorporating Real-World Constraints

While the current model captures key market dynamics such as quality progression, pricing, and adoption, real-world constraints like political influences and cultural variations remain unaddressed. Political factors, such as differing regulatory environments across regions or inconsistent government funding, can significantly impact platform adoption. For example, rural schools in developing countries may face systemic barriers such as poor internet connectivity, which are not accounted for in the model.
Cultural variations also play a vital role in technology adoption. Schools in some regions may prioritize traditional teaching methods over digital learning tools, regardless of their quality. Future research could integrate regional preferences, funding disparities, and other sociopolitical factors to enhance the model's applicability across diverse contexts.

2. The Role of Hybrid Learning Environments

The rise of hybrid learning environments, particularly in the wake of the COVID-19 pandemic, presents new challenges and opportunities for EdTech platforms. Hybrid systems, which blend in-person and online learning, may alter the dynamics of platform competition. For instance, platforms offering integrated solutions for both modes may gain a competitive edge.
Moreover, hybrid environments increase the demand for interoperability among platforms, which the current model does not consider. Schools may prefer platforms that can seamlessly integrate with existing tools and technologies, thereby reducing switching costs and enhancing user satisfaction.

3. Post-Pandemic Shifts in Education Systems

The pandemic has accelerated the digital transformation of education systems globally. However, it has also highlighted issues such as unequal access to technology and the digital divide. While the model assumes equal access to EdTech platforms, this is far from the reality in many regions. Incorporating access inequality into the model could provide a more nuanced understanding of adoption dynamics and policy impacts.
Additionally, post-pandemic shifts in education, such as increased reliance on asynchronous learning or the rise of micro-credentialing platforms, could reshape the competitive landscape. Platforms that adapt to these trends by offering modular, flexible learning solutions may achieve sustained growth.

4. Policy Implications and Design

The findings highlight the importance of targeted subsidies in promoting adoption among cost-sensitive schools. However, the long-term effects of such policies on market diversity and innovation remain uncertain. Policymakers must strike a balance between fostering competition and avoiding over-reliance on government support. Future models could simulate phased or conditional subsidies to evaluate their impact on sustaining innovation and market diversity.

5. Sustainability and Scalability of Quality Improvements

The model assumes that platforms can continuously reinvest profits to improve quality. However, this approach may face diminishing returns or resource constraints in the real world. Platforms that rely heavily on advanced technologies, such as AI-driven personalization, may encounter scalability challenges due to high computational costs. Future research could explore the trade-offs between scalability and quality progression, particularly for smaller platforms.

6. Broader Impacts on the EdTech Ecosystem

The competitive dynamics modeled in this study have implications beyond platform-level strategies. The consolidation of market power by a few dominant platforms could lead to monopolistic behaviors, reducing innovation and increasing costs for schools. Conversely, fostering a diverse ecosystem with

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multiple competing platforms may drive innovation and ensure equitable access to education technologies. By addressing these considerations, future research can refine the model and provide a more comprehensive understanding of the EdTech market. This will enable stakeholders to better navigate the complexities of an evolving education landscape and design strategies that align with long-term goals for equity, sustainability, and innovation.

IV. Conclusion

This study provides a comprehensive analysis of the competitive dynamics in the EdTech market using a game-theoretic approach. The findings emphasize the critical role of early adoption, network effects, reinvestment strategies, and policy interventions in shaping market outcomes.

Key conclusions from the study include:

• Early Adoption and Quality Progression: Platforms with higher initial quality and reinvestment capacity, such as Platform 1 in the model, are better positioned to achieve long-term market dominance. The adoption dynamics align with real-world examples like Google Classroom, demonstrating the importance of quality improvements and network effects.

• Barriers for Smaller Platforms: Despite consistent reinvestment, smaller platforms struggle to compete in markets dominated by established players. This highlights the significance of differentiating through niche offerings or leveraging external support.

• Impact of Policy Interventions: Subsidies effectively boost adoption among cost-sensitive schools, promoting broader access to educational technologies. However, their design and distribution must ensure sustainable competition and innovation.

The study also identifies several areas for further research:

• Expanding the model to incorporate multi-platform adoption and hybrid learning scenarios.

• Analyzing the long-term impacts of phased subsidy policies on market diversity and innovation.

• Exploring the role of regional variations and school-specific constraints in adoption dynamics.

In conclusion, the research offers valuable insights for EdTech firms seeking to optimize their strategies and for policymakers aiming to foster a competitive and innovative market ecosystem. By balancing quality, pricing, and policy measures, stakeholders can drive equitable access to education while sustaining innovation in the EdTech sector.

References

[1]. Academy, K. (2020). Khan academy annual report 2020: Adoption trends in schools [Accessed January 2025]. https://www.khanacademy.org
[2]. Anderson, R., & Kumar, R. (2021). Ai in education: The role of personalization in driving learning outcomes. Artificial Intelligence in Education, 25 (1), 89–105.
[3]. Brown, E., & Miller, J. (2020). Policy innovation and market equity in the edtech sector. Journal of Policy and Innovation, 17 (3), 215–230
[4]. Chen, M., & Zhao, K. (2022). The role of government subsidies in shaping edtech market competition. Journal of Policy and Technology, 18 (4), 305–325.
[5]. ClassDojo. (2022). Classdojo adoption metrics: A 2022 overview [Accessed January 2025]. https://www. classdojo.com
[6]. Google. (2021). Google classroom usage statistics and growth (2021) [Accessed January 2025]. https://edu.google.com/classroom
[7]. Gupta, A., & Sahni, D. (2020). Barriers to entry for small edtech platforms: Challenges and opportunities.
[8]. Journal of Educational Economics, 15 (3), 200–215.
[9]. Harris, R., & Jones, M. (2019). Institutional readiness and edtech adoption: Bridging the gap. Journal of Educational Technology, 11 (4), 145–160.
[10]. Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. The American Economic Review, 75 (3), 424–440.
[11]. Kumar, N., & Singh, A. (2022). Scalability and quality trade-offs in edtech platforms. Educational Tech-nology Review, 14 (2), 101–125.
[12]. Liu, W., & Zhang, L. (2019). Network effects and platform adoption in the education technology sector.
[13]. Journal of Digital Economics, 10 (1), 45–60.

[14]. NCES. (2023). National center for education statistics: Edtech adoption trends (2018–2023) [Accessed January 2025]. https://nces.ed.gov
[15]. of Education, U. D. (2022). Subsidy programs for rural schools: Impact on edtech adoption [Accessed January 2025]. https://www.ed.gov
[16]. Parker, G., Van Alstyne, M. W., & Choudary, S. P. (2016). Platform revolution: How networked markets are transforming the economy. MIT Sloan Management Review.
[17]. Rogers, E. M. (2003). Diffusion of innovations. Free Press.
[18]. Zhao, J., & Harris, R. (2020). Exploring the adoption of edtech platforms in public schools: A case study approach. Journal of Educational Technology, 12 (2), 123–135.