

Business Requirements Document (BRD)

Trilingual Educational App for Sri Lankan Children

Document Version: 1.0

Date: October 9, 2025

Project Status: Pre-Development

Target Launch: 6 weeks from start date

EXECUTIVE SUMMARY

Project Overview

Development of a mobile application that teaches life skills and literacy to Sri Lankan children aged 4-6 years through integrated trilingual learning (Sinhala, Tamil, English). The app uniquely combines practical life skills education with letter recognition and language development.

Business Opportunity

- **Market Gap:** No Sri Lankan app combines life skills + literacy in three languages
- **Target Market:** 500,000+ children aged 4-6 in Sri Lanka
- **Competitive Advantage:** Life skills focus (not just academics) + authentic trilingual integration
- **Revenue Model:** Freemium with premium content

Success Metrics

- 10,000 downloads in first 3 months
 - 60% user retention after 30 days
 - Average 15 minutes daily usage per child
 - 70% parent satisfaction rating
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1. BUSINESS OBJECTIVES

1.1 Primary Objectives

1. **Educational Impact:** Enable children to master basic life skills before Grade 1
2. **Language Development:** Facilitate natural trilingual learning (Sinhala/Tamil/English)
3. **Market Penetration:** Establish as leading pre-school education app in Sri Lanka

4. User Engagement: Create engaging content that encourages real-world practice

5. Scalability: Build foundation for expansion to additional age groups and content

1.2 Strategic Goals

- **Year 1:** Establish brand and user base (50,000+ users)
- **Year 2:** Expand content library and introduce premium features
- **Year 3:** Regional expansion (South Asian markets)

1.3 Key Performance Indicators (KPIs)

- Daily Active Users (DAU): Target 5,000 by Month 3
 - Monthly Active Users (MAU): Target 15,000 by Month 3
 - Session duration: Average 15-20 minutes
 - Completion rate: 70% of started activities
 - Parent satisfaction: 4+ stars on app stores
 - Learning outcomes: 80% skill mastery in assessments
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2. SCOPE

2.1 In Scope

Phase 1 (MVP - 6 Weeks):

- 2 complete learning levels (My Morning, Meal Time)
- 10 life skills videos (5 per level)
- 10 letter introductions (T, B, D, M, W per language = 30 letters)
- Basic letter recognition games
- Simple progress tracking
- Parent dashboard (basic)
- Photo upload for activity verification
- Trilingual content throughout

Phase 2 (Months 2-4):

- 4 additional levels (Play Time, Helping Home, Friends & Family, Staying Safe)
- Letter tracing functionality

- Word building activities
- Assessment system (15 questions per level)
- Enhanced progress analytics
- Downloadable activity guides

Phase 3 (Months 5-6):

- Voice recognition for pronunciation
- Advanced gamification
- Community features (optional)
- Offline mode
- Multi-device sync

2.2 Out of Scope

- Live tutoring or teacher interaction
- Social media integration
- Paid advertising within app
- Parent-to-parent communication
- Content for ages outside 4-6 range
- Full school curriculum coverage

2.3 Assumptions

- Target devices: Android 8.0+, iOS 13.0+
- Internet required for initial content download
- Parents will supervise activity completion
- Children have basic touch device familiarity
- Access to materials for hands-on activities (common household items)

2.4 Constraints

- Budget: \$10,000-15,000 for MVP
- Timeline: 6 weeks to MVP launch
- Team: Small (4-5 people)
- Content: AI-generated (not live action initially)
- Technology: Must use existing free/low-cost platforms

2.5 Dependencies

- AI image generation tools (Leonardo.AI, Bing Creator)
 - AI voice generation (Google Cloud TTS)
 - Video hosting solution
 - App store approval process
 - Parent testing group availability
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3. STAKEHOLDERS

3.1 Primary Stakeholders

Children (Ages 4-6):

- End users of learning content
- Need: Fun, engaging, age-appropriate activities
- Success criteria: Enjoy using app, learn new skills

Parents:

- Decision makers, payment handlers
- Need: Quality education, progress visibility, child safety
- Success criteria: See child development, trust content quality

Development Team:

- Project execution
- Need: Clear requirements, realistic timelines
- Success criteria: Deliver functional, quality product

Investors/Sponsors (Future):

- Potential funding sources
- Need: Scalable business model, market traction
- Success criteria: User growth, engagement metrics

3.2 Secondary Stakeholders

Preschools/Kindergartens:

- Potential B2B customers
- Need: Curriculum-aligned content, class management
- Success criteria: Student improvement, easy integration

Early Childhood Educators:

- Content advisors, validators
- Need: Pedagogically sound content
- Success criteria: Meets developmental standards

Government Education Ministry:

- Regulatory compliance, potential partnerships
 - Need: Alignment with national education goals
 - Success criteria: Support national curriculum
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4. USER REQUIREMENTS

4.1 Child User Requirements

Functional Requirements:

- FR-C1: Access learning content through simple, icon-based navigation
- FR-C2: Watch 2-5 minute educational videos
- FR-C3: Complete interactive games and activities
- FR-C4: Receive immediate positive feedback on actions
- FR-C5: Earn badges and rewards for completing activities
- FR-C6: Use app with minimal reading ability required
- FR-C7: Submit photos of completed real-world activities

Non-Functional Requirements:

- NFR-C1: App loads within 3 seconds
- NFR-C2: Videos start playing within 5 seconds
- NFR-C3: Touch targets minimum 48x48 pixels
- NFR-C4: Text minimum 18pt font size
- NFR-C5: Maximum 20-minute session before break reminder

- NFR-C6: Interface colorful, friendly, non-threatening
- NFR-C7: No accidental navigation to parent settings

User Stories:

- "As a 5-year-old, I want to watch a video about brushing teeth so I can learn to do it myself"
- "As a child, I want to play games with letters so learning is fun"
- "As a kid, I want to earn stars when I complete activities so I feel proud"
- "As a young learner, I want big buttons I can easily tap"

4.2 Parent User Requirements

Functional Requirements:

- FR-P1: Create and manage child profiles
- FR-P2: Set daily screen time limits
- FR-P3: View detailed progress reports
- FR-P4: Verify child's completed real-world activities
- FR-P5: Download activity guides and worksheets
- FR-P6: Adjust learning preferences and difficulty
- FR-P7: Receive notifications about milestones
- FR-P8: Access parent dashboard with PIN/password
- FR-P9: Control content access and progression
- FR-P10: Export progress reports

Non-Functional Requirements:

- NFR-P1: Dashboard loads within 2 seconds
- NFR-P2: Data synced across devices
- NFR-P3: Reports available in PDF format
- NFR-P4: Privacy-compliant data handling
- NFR-P5: Secure authentication
- NFR-P6: Support both portrait and landscape modes

User Stories:

- "As a parent, I want to see what my child learned today so I can discuss it with them"
- "As a working parent, I want to limit screen time so my child doesn't overuse the app"

- "As a mother, I want to verify my child actually did the activities, not just watched videos"
 - "As a father, I want activity ideas I can do with my child on weekends"
 - "As a guardian, I want to know which areas my child struggles with so I can help"
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5. FUNCTIONAL REQUIREMENTS

5.1 Core Learning System

FR-5.1.1: Level Structure

- System shall provide 6 themed learning levels
- Each level contains 3 progressive stages
- Stages unlock sequentially upon completion
- Each stage contains 3-5 activities

FR-5.1.2: Content Types

- System shall support 4 content types:
 1. Educational videos (2-5 minutes)
 2. Interactive games (letter recognition, matching)
 3. Real-world activities (with parent verification)
 4. Assessment quizzes (15 questions per level)

FR-5.1.3: Trilingual Integration

- All content available in Sinhala, Tamil, and English simultaneously
- User can select primary language preference
- Subtitles/text displayed in all 3 languages
- Audio narration in selected primary language

FR-5.1.4: Video Player

- Standard controls: play, pause, replay
- Progress bar with seek capability
- Volume control
- Fullscreen option
- "I did it!" button appears after video completion

- No external video platform links (embedded only)

FR-5.1.5: Interactive Activities

- Letter recognition games (tap correct letter)
- Word building (drag-and-drop letters)
- Matching games (connect items)
- Simple quizzes (multiple choice)
- Immediate feedback (visual and audio)

FR-5.1.6: Assessment System

- 15 questions per level
- Mix of recognition, application, and recall questions
- No time limit (child-paced)
- Score calculated automatically
- Results shown with encouraging messaging
- Can retake unlimited times
- Must score 12/15 (80%) to unlock next level

5.2 Progress Tracking

FR-5.2.1: Activity Completion

- System tracks all completed videos, games, activities
- Completion marked with visual indicator (checkmark)
- Timestamp recorded for each completion
- Incomplete activities clearly indicated

FR-5.2.2: Learning Metrics

- Letters mastered (by language)
- Life skills completed
- Total time spent learning
- Learning streak (consecutive days)
- Assessment scores (all attempts)
- Areas of difficulty identified

FR-5.2.3: Badges and Rewards

- Badge earned for each completed activity
- Special badges for milestones (5 videos, 10 videos, etc.)
- Level completion certificates
- Visual badge collection displayed
- Celebration animations for achievements

FR-5.2.4: Parent Analytics

- Dashboard showing child's progress overview
- Detailed breakdown by skill category
- Time-on-task analysis
- Assessment performance trends
- Strengths and growth areas highlighted
- AI-generated recommendations for improvement

5.3 User Management

FR-5.3.1: Profile Creation

- Create child profiles (name, age, photo)
- Support multiple children per account
- Select preferred primary language per child
- Set learning goals and preferences
- Profile avatars/customization

FR-5.3.2: Parental Controls

- PIN/password protected parent dashboard
- Set daily screen time limits (5-60 minutes)
- Restrict content access
- Disable in-app purchases
- Control notification settings

FR-5.3.3: Activity Verification

- Parent can view child's uploaded photos

- Approve or request redo of activities
- Add comments/notes to activities
- Mark activities as completed manually if needed

5.4 Content Delivery

FR-5.4.1: Content Storage

- Videos hosted on reliable CDN
- Images cached locally after first view
- Audio files cached for offline playback
- Progressive download for videos (streaming)

FR-5.4.2: Offline Capability (Phase 2)

- Download content for offline viewing
- Select specific levels to download
- Indicate downloaded vs online content
- Sync progress when online

5.5 Notifications

FR-5.5.1: Child Notifications

- Daily learning reminder (customizable time)
- Celebration notifications for achievements
- Gentle break reminders after 20 minutes
- New content available alerts

FR-5.5.2: Parent Notifications

- Weekly progress summary
- Milestone achievements
- Activity verification requests
- Inactivity alerts (if child hasn't used app in 3 days)

6. NON-FUNCTIONAL REQUIREMENTS

6.1 Performance

NFR-6.1.1: Speed

- App launch: < 3 seconds
- Screen transitions: < 1 second
- Video start: < 5 seconds
- Image loading: < 2 seconds
- API responses: < 1 second

NFR-6.1.2: Scalability

- Support 10,000 concurrent users
- Handle 100,000 registered users
- Database queries optimized for < 100ms response
- CDN handles video delivery at scale

NFR-6.1.3: Reliability

- 99.5% uptime
- Graceful error handling
- Auto-save progress every 30 seconds
- Crash recovery mechanism
- Data backup every 24 hours

6.2 Usability

NFR-6.2.1: Child Interface

- One-handed operation possible
- Accidental touch prevention
- Clear visual hierarchy
- Intuitive icon design
- Minimal text dependence
- High contrast colors
- Large touch targets (48x48px minimum)

NFR-6.2.2: Parent Interface

- Clean, professional design

- Quick access to key information
- Data visualization (charts, graphs)
- Export functionality
- Help documentation available
- Onboarding tutorial

NFR-6.2.3: Accessibility

- Support for color blindness
- Screen reader compatible
- Subtitle options for hearing impaired
- Adjustable font sizes
- High contrast mode option

6.3 Security & Privacy

NFR-6.3.1: Data Protection

- COPPA compliant (Children's Online Privacy Protection Act)
- No personal data collected from children without parental consent
- Encrypted data transmission (HTTPS/TLS)
- Secure password storage (hashed and salted)
- No third-party tracking or analytics without consent
- Regular security audits

NFR-6.3.2: Content Safety

- Age-appropriate content only
- No external links accessible to children
- No in-app purchases without parent PIN
- No ads or commercial content
- Photo uploads private (not shared publicly)
- Moderation system for any user-generated content

NFR-6.3.3: Authentication

- Secure parent login
- Session timeout after 15 minutes inactive

- Password recovery mechanism
- Two-factor authentication option

6.4 Compatibility

NFR-6.4.1: Device Support

- Android 8.0 (Oreo) and above
- iOS 13.0 and above
- Tablet and phone form factors
- Minimum screen size: 7 inches (tablets preferred)
- Works on devices with 2GB+ RAM

NFR-6.4.2: Network

- Works on 3G/4G/5G/WiFi
- Graceful degradation on slow connections
- Offline mode for downloaded content
- Bandwidth optimization for video streaming

NFR-6.4.3: Localization

- Unicode support for Sinhala/Tamil scripts
- Right-to-left text support (for Tamil)
- Date/time format localization
- Number format localization

6.5 Maintainability

NFR-6.5.1: Code Quality

- Modular architecture
- Comprehensive documentation
- Automated testing (unit, integration)
- Version control (Git)
- Code review process

NFR-6.5.2: Updates

- Over-the-air content updates (no app store approval needed)

- Backward compatibility for 2 previous versions
 - Staged rollout for major updates
 - Rollback capability
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7. CONTENT REQUIREMENTS

7.1 Video Content

Specifications:

- Duration: 2-5 minutes per video
- Resolution: 1080p (1920x1080)
- Format: MP4, H.264 codec
- Aspect ratio: 16:9
- Frame rate: 30fps
- File size: < 50MB per video
- Subtitles: Embedded in all 3 languages
- Audio: Clear narration, minimal background music

Content Guidelines:

- Age-appropriate language
- Culturally relevant to Sri Lanka
- Gender-neutral presentation
- Positive, encouraging tone
- Clear learning objectives
- Step-by-step instructions
- Visual demonstrations
- Real-world context

Phase 1 Content:

- Level 1 (My Morning): 5 videos
 1. Morning routine overview
 2. Brushing teeth
 3. Getting dressed

- 4. Making bed
- 5. Washing hands
- Level 2 (Meal Time): 5 videos
 - 1. Meal time overview
 - 2. Making sandwich
 - 3. Fruit salad
 - 4. Pouring water safely
 - 5. Table manners

7.2 Interactive Content

Letter Recognition Games:

- 30 letters total (10 English, 10 Sinhala, 10 Tamil for Phase 1)
- 3 difficulty levels per letter
- Visual and audio cues
- Immediate feedback
- Adaptive difficulty

Word Building Activities:

- 30 words derived from life skills activities
- Drag-and-drop letter interface
- Audio pronunciation on completion
- Visual representation of word

Assessment Questions:

- 15 questions per level (30 total for Phase 1)
- Multiple choice format
- Mix of text, image, and audio questions
- Randomized order
- No time pressure

7.3 Supporting Content

Activity Guides (PDFs):

- One per life skill
- Printable format
- Trilingual instructions
- Materials list
- Step-by-step photos/diagrams
- Safety tips
- Extension activities

Parent Resources:

- App usage guide
 - Child development milestones
 - Activity troubleshooting tips
 - FAQs
 - Contact support information
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8. TECHNICAL REQUIREMENTS

8.1 Technology Stack

Frontend (Mobile App):

- Framework: React Native or Flutter (cross-platform)
- State Management: Redux or Provider
- Local Storage: SQLite or Realm
- Media Playback: React Native Video or similar

Backend:

- Platform: Firebase (Authentication, Firestore, Storage) OR
- Node.js + Express (if custom backend)
- Database: Cloud Firestore or PostgreSQL
- File Storage: Firebase Storage or AWS S3

AI Tools (Content Creation):

- Images: Leonardo.AI, Bing Image Creator

- Voice: Google Cloud Text-to-Speech
- Music: Suno.AI or royalty-free libraries

Analytics:

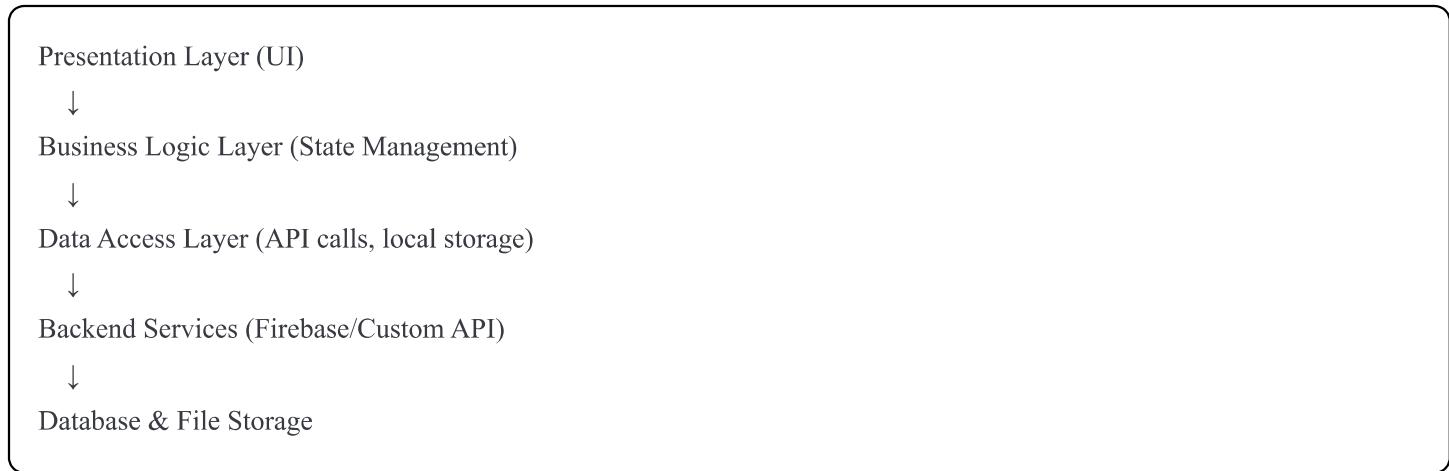
- Firebase Analytics (free tier)
- Mixpanel (optional, for advanced tracking)

Video Hosting:

- Firebase Storage or AWS CloudFront CDN
- Adaptive bitrate streaming

8.2 Architecture

App Architecture:



Key Components:

- Authentication Module
- Content Delivery Module
- Progress Tracking Module
- Assessment Engine
- Notification Service
- Analytics Module
- Offline Sync Module

8.3 APIs and Integrations

Required APIs:

- User Authentication (Firebase Auth or custom)
- Content Management (Firebase Storage or S3)
- Database Operations (Firestore or PostgreSQL)
- Push Notifications (Firebase Cloud Messaging)
- Analytics (Firebase Analytics)

External Services:

- Google Cloud Text-to-Speech (voice generation)
- Payment Gateway (for premium features - Phase 2)
- Email Service (for notifications, password recovery)

8.4 Data Model

Core Entities:

User (Parent):

- userID (primary key)
- email
- password (hashed)
- createdAt
- lastLoginAt

Child Profile:

- profileID (primary key)
- userID (foreign key)
- name
- age
- dateOfBirth
- avatarURL
- primaryLanguage
- screenTimeLimit
- createdAt

Progress:

- progressID (primary key)
- profileID (foreign key)
- levelID
- stageID
- activityID
- status (not_started, in_progress, completed)
- completedAt
- timeSpent
- score (for assessments)

Activity:

- activityID (primary key)
- levelID
- stageID
- type (video, game, quiz, real_world)
- title (Sinhala, Tamil, English)
- description
- contentURL
- duration
- difficulty

Badge:

- badgeID (primary key)
- name
- description
- iconURL
- criteria

User_Badge:

- profileID (foreign key)
- badgeID (foreign key)
- earnedAt

8.5 Infrastructure

Hosting:

- App Store: Apple App Store
- App Store: Google Play Store
- Backend: Firebase or AWS
- CDN: CloudFlare or AWS CloudFront

Development Environment:

- Version Control: GitHub
- CI/CD: GitHub Actions or Firebase App Distribution
- Testing: Jest (unit), Detox (E2E)
- Project Management: Jira or Trello

Production Environment:

- Monitoring: Firebase Crashlytics
 - Error Tracking: Sentry (optional)
 - Performance Monitoring: Firebase Performance
 - Uptime Monitoring: UptimeRobot
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9. USER INTERFACE REQUIREMENTS

9.1 Design Principles

For Children:

- Large, colorful, friendly interface
- Icon-based navigation (minimal text)
- Immediate visual feedback
- Encouraging animations
- No complex menus
- Single-tap interactions preferred
- Safety from accidental exits

For Parents:

- Clean, professional design
- Data-driven insights
- Quick access to controls
- Clear information hierarchy
- Export/share functionality
- Help always accessible

9.2 Key Screens (Child Interface)

1. Home Screen

- Profile selector (if multiple children)
- 6 category cards (levels)
- Progress indicator on each
- "My Badges" button
- Time left today indicator
- Settings icon (parent-locked)

2. Level Screen

- Level title and theme
- 3 stage buttons
- Lock icons for incomplete stages
- Back button
- Progress bar for level

3. Stage Screen

- List of activities in stage
- Activity type icons (video, game, quiz)
- Completion checkmarks
- Duration indicators
- "Start" buttons

4. Video Player Screen

- Full-screen video

- Large play/pause button
- Progress bar
- Volume control
- "I did it!" button (after completion)
- Back button

5. Game Screen

- Instructions at top
- Interactive game area
- Score/progress indicator
- Hint button
- Celebration on completion

6. Assessment Screen

- Question counter (1/15)
- Question text/image
- Answer options (large buttons)
- Progress bar
- Encouraging feedback

7. Celebration Screen

- Achievement message
- Badge display
- Confetti animation
- "What's next?" suggestions
- Share with parent option

9.3 Key Screens (Parent Interface)

1. Parent Dashboard

- Child selector (if multiple)
- Weekly summary cards
- Recent activity feed
- Quick stats (time, completions, streak)

- Action buttons (settings, reports, guides)

2. Progress Report

- Overall completion percentage
- Skills breakdown (chart)
- Letters mastered
- Assessment scores trend
- Strengths and growth areas
- Time analysis
- Export button

3. Activity Verification

- Photo gallery of child's uploads
- Activity title and date
- Approve/reject buttons
- Comment field
- View instructions link

4. Settings

- Child profile management
- Screen time limits
- Notification preferences
- Content controls
- Language selection
- Account settings
- Help & support

5. Activity Guides

- Searchable library
- Filter by category
- Download buttons
- Preview thumbnails
- Recently downloaded

10. TESTING REQUIREMENTS

10.1 Testing Strategy

Unit Testing:

- All business logic functions
- Data models
- API endpoints
- Target: 80% code coverage

Integration Testing:

- Authentication flow
- Content delivery
- Progress tracking
- Payment processing (Phase 2)

User Acceptance Testing (UAT):

- Beta testing with 20-50 families
- 2-week testing period
- Feedback collection via surveys
- Bug tracking and prioritization

Performance Testing:

- Load testing (simulate 1000 concurrent users)
- Video streaming performance
- App launch time
- Screen transition speed

Security Testing:

- Penetration testing
- Data encryption verification
- Authentication security
- Privacy compliance check

Device Testing:

- Test on 10+ Android devices (various manufacturers, OS versions)
- Test on 5+ iOS devices (iPhone, iPad, various iOS versions)
- Test on different screen sizes
- Test on low-end devices (2GB RAM)

Usability Testing:

- Test with 10 children (ages 4-6)
- Observe navigation ease
- Measure task completion
- Identify confusion points
- Test with 10 parents
- Verify dashboard clarity

10.2 Test Cases (Examples)

Child User Flow:

1. Child selects profile → Should load home screen
2. Child taps Level 1 → Should show 3 stages
3. Child taps locked stage → Should show "Complete previous stage" message
4. Child watches video → Progress should update
5. Child completes activity → Badge should be awarded
6. Child reaches screen time limit → Should show break message

Parent User Flow:

1. Parent enters PIN → Should access dashboard
2. Parent views progress → Should see accurate data
3. Parent sets screen time → Should apply immediately
4. Parent downloads guide → Should save PDF
5. Parent verifies activity → Should update child's progress

Edge Cases:

1. Internet disconnects mid-video → Should resume when reconnected

2. App crashes → Should save progress
 3. Multiple children use simultaneously → Data shouldn't mix
 4. Child tries to access parent settings → Should be blocked
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11. DEPLOYMENT PLAN

11.1 Phases

Phase 1: MVP Launch (Week 6)

- Internal testing complete
- Beta testing with 20 families
- Submit to app stores
- Soft launch (invite-only)

Phase 2: Public Beta (Week 8)

- Address beta feedback
- Limited public release (500 users)
- Monitor performance and bugs
- Gather user feedback

Phase 3: Full Launch (Week 10)

- Open to all users
- Marketing campaign begins
- Press releases
- Social media promotion
- School partnerships outreach

Phase 4: Iteration (Ongoing)

- Weekly bug fixes
- Monthly content updates
- Quarterly feature releases

11.2 App Store Submission

Requirements:

- App Store Developer accounts (Apple: \$99/year, Google: \$25 one-time)
- App icons (all required sizes)
- Screenshots (multiple devices)
- App description (Sinhala, Tamil, English)
- Keywords for SEO
- Privacy policy URL
- Content rating (appropriate for ages 4+)
- Demo video (optional but recommended)

Timeline:

- Apple App Store: 1-7 days review
- Google Play Store: 1-3 days review
- Budget 2 weeks for potential resubmissions

11.3 Marketing Launch

Pre-Launch (Weeks 1-6):

- Build landing page
- Social media accounts setup
- Email list building
- Beta tester recruitment

Launch Week:

- Press release distribution
- Social media campaign
- Influencer outreach (parenting bloggers)
- Facebook/Instagram ads (if budget)
- App Store Optimization (ASO)

Post-Launch (Ongoing):

- User testimonials collection
- Content marketing (blog posts, videos)
- Partnership development (preschools)

- Community building
 - Referral program
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12. RISKS AND MITIGATION

12.1 Technical Risks

Risk 1: AI-Generated Content Quality Issues

- Probability: Medium
- Impact: High
- Mitigation:
 - Rigorous content review process
 - Multiple generation attempts per asset
 - Human oversight for all content
 - Pilot testing with children

Risk 2: App Performance on Low-End Devices

- Probability: Medium
- Impact: Medium
- Mitigation:
 - Test on budget devices early
 - Optimize media file sizes
 - Implement adaptive quality settings
 - Progressive image loading

Risk 3: App Store Rejection

- Probability: Low
- Impact: High
- Mitigation:
 - Thorough guideline review before submission
 - Pre-submission checklist
 - Age-appropriate content verification
 - Privacy policy compliance review

Risk 4: Data Loss/Corruption

- Probability: Low
- Impact: High
- Mitigation:
 - Frequent auto-save (every 30 sec)
 - Cloud backup daily
 - Local backup mechanism
 - Data validation on save

12.2 Business Risks

Risk 5: Low User Adoption

- Probability: Medium
- Impact: High
- Mitigation:
 - Pre-launch market research
 - Beta testing with target audience
 - Iterative improvements based on feedback
 - Strong marketing strategy
 - Referral incentives

Risk 6: High User Acquisition Cost

- Probability: Medium
- Impact: Medium
- Mitigation:
 - Organic growth focus (SEO, content marketing)
 - Partnership with preschools (B2B)
 - Referral program
 - Word-of-mouth emphasis
 - Free tier with clear value

Risk 7: Competition Launch Similar Product

- Probability: Low

- Impact: Medium
- Mitigation:
 - Fast execution (first-mover advantage)
 - Unique positioning (life skills + literacy)
 - Build loyal user base quickly
 - Continuous innovation
 - Strong brand building

Risk 8: Regulatory Changes (Child Privacy Laws)

- Probability: Low
- Impact: High
- Mitigation:
 - Stay informed on regulations
 - Compliance from day one
 - Legal consultation
 - Privacy-first design
 - Regular audits

12.3 Resource Risks

Risk 9: Timeline Delays

- Probability: High
- Impact: Medium
- Mitigation:
 - Realistic timeline with buffer
 - Prioritized feature list (MVP focus)
 - Daily standup meetings
 - Early identification of blockers
 - Flexible scope adjustment

Risk 10: Budget Overruns

- Probability: Medium
- Impact: Medium

- Mitigation:
 - Detailed budget planning
 - Use free tools where possible
 - Phased approach (delay nice-to-haves)
 - Regular cost tracking
 - Contingency fund (20%)

Risk 11: Team Availability Issues

- Probability: Medium
 - Impact: Medium
 - Mitigation:
 - Cross-training team members
 - Documentation for all work
 - Backup freelancers identified
 - Clear task assignments
 - Regular progress checks
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13. SUCCESS CRITERIA

13.1 Launch Success (Month 1)

- App live on both app stores
- Zero critical bugs in production
- 1,000+ downloads
- 4+ star average rating
- 50% user retention after 7 days

13.2 Early Growth (Month 3)

- 10,000+ total downloads
- 5,000+ monthly active users
- 60% user retention after 30 days
- Average session: 15+ minutes
- 70%+ activity completion rate
- 100+ positive reviews
- 5 preschool partnerships

13.3 Sustained Growth (Month 6)

- 50,000+ total downloads
- 20,000+ monthly active users
- 50%+ user retention after 90 days
- All Phase 2 content live
- Premium tier launched
- Break-even or profitability
- Featured on app store (goal)

13.4 Educational Impact

- 80%+ children show skill improvement (parent-reported)
 - 75%+ pass assessments on first attempt
 - 90%+ parents recommend to others
 - Measurable learning outcomes documented
 - Positive testimonials from educators
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14. BUDGET & RESOURCES

14.1 Development Budget (MVP - Phase 1)

Personnel Costs (6 weeks):

- Full-Stack Developer (1): \$4,000-6,000
- Content Creator/Scriptwriter (1): \$1,500-2,000
- UI/UX Designer (1): \$1,500-2,000
- Video Editor (1): \$1,000-1,500
- QA Tester (part-time): \$500-800
- **Subtotal: \$8,500-12,300**

Technology & Tools:

- AI Image Generation (Leonardo.AI Pro): \$40 (2 months)
- AI Voice Generation (Google Cloud TTS): Free tier sufficient
- Background Music (Suno AI): Free tier sufficient
- Video Editing (CapCut): Free
- App Development Tools: Free (VS Code, React Native)

- Firebase (Backend): Free tier (Spark Plan)
- **Subtotal: \$40-50**

App Store Fees:

- Apple Developer Account: \$99/year
- Google Play Developer Account: \$25 one-time
- **Subtotal: \$124**

Testing & QA:

- Test Devices (if needed): \$300-500
- Beta Testing Incentives: \$200-300
- **Subtotal: \$500-800**

Marketing (Soft Launch):

- Landing Page Hosting: \$20/month
- Social Media Ads (minimal): \$100-200
- Graphic Design Assets: \$100
- **Subtotal: \$220-320**

Contingency (20%): \$2,000

TOTAL MVP BUDGET: \$11,384-15,594 Recommended Budget: \$15,000

14.2 Ongoing Costs (Monthly, Post-Launch)

Infrastructure:

- Firebase Blaze Plan: \$25-100 (usage-based)
- CDN/Video Hosting: \$20-50
- Domain & Hosting: \$20
- **Subtotal: \$65-170/month**

Content Creation:

- New videos (2/month): \$300-500
- Content updates: \$100-200
- **Subtotal: \$400-700/month**

Marketing:

- Social media ads: \$200-500
- Content marketing: \$100
- Partnership outreach: \$100
- **Subtotal: \$400-700/month**

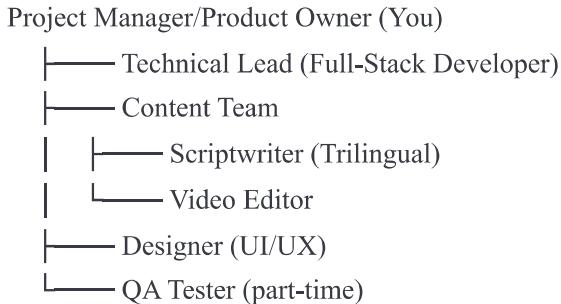
Operations:

- Customer support (part-time): \$300-500
- Analytics tools: \$50
- Maintenance: \$200
- **Subtotal: \$550-750/month**

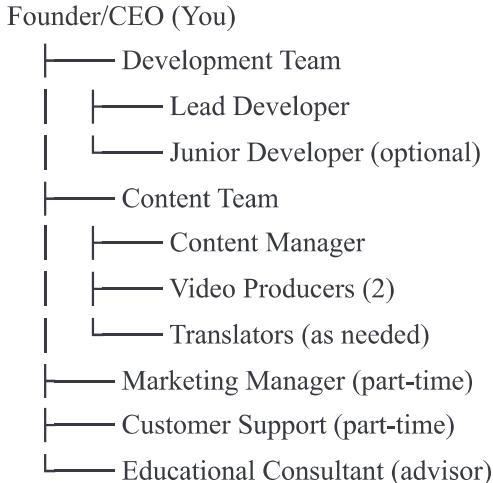
TOTAL MONTHLY: \$1,415-2,320

14.3 Team Structure

Phase 1 (MVP Development - 6 weeks):



Phase 2 (Growth - Months 2-6):



14.4 Resource Requirements

Hardware:

- Development laptop/desktop (team has)
- Testing devices:
 - 2 Android phones (low/mid range)
 - 1 Android tablet
 - 1 iPhone
 - 1 iPad
- Video recording setup (if doing real content later)

Software & Services:

- Development: VS Code, Git, React Native (all free)
- Design: Figma (free tier), Canva Pro (optional)
- AI Tools: Leonardo.AI, Google TTS, Suno AI
- Project Management: Trello/Asana (free tier)
- Communication: Slack/Discord (free)
- Version Control: GitHub (free for private repos)

Licenses:

- All content created must be royalty-free or properly licensed
- Music from Suno AI or YouTube Audio Library (free)
- Stock images from Pixabay, Pexels (free)
- Fonts: Google Fonts (free)

15. PROJECT TIMELINE

15.1 Detailed 6-Week MVP Timeline

WEEK 1: Foundation & Setup

Days 1-2: Project Kickoff

- Team assembled and briefed
- Development environment setup

- Tools and accounts created
- Project repository initialized
- Design system started

Days 3-4: Content Planning

- All video scripts written (10 videos)
- Storyboards created
- AI prompts prepared
- Voice scripts finalized (3 languages)

Days 5-7: Initial Content Creation

- Character design finalized
- First 5 images generated
- First 2 videos assembled (test)
- Feedback and iteration

WEEK 2: Content Production & Backend

Days 8-10: Bulk Content Creation

- All 15 scene images per video generated
- 5 videos fully assembled
- Voice-overs generated (all languages)
- Background music selected

Days 11-14: Backend Development

- Firebase project setup
- Authentication system implemented
- Database schema created
- File storage configured
- API endpoints developed

WEEK 3: Frontend Development - Core

Days 15-17: Basic UI Structure

- Navigation system implemented
- Home screen developed
- Level/Stage screens built
- Profile management UI

Days 18-21: Content Display

- Video player integrated
- Game screens developed
- Progress tracking UI
- Badge system UI

WEEK 4: Frontend Development - Features

Days 22-24: Interactive Features

- Letter recognition games coded
- Assessment system built
- Photo upload functionality
- Reward animations implemented

Days 25-28: Parent Dashboard

- Parent PIN/login system
- Progress dashboard
- Analytics views
- Settings screens
- Activity guide downloads

WEEK 5: Integration & Testing

Days 29-31: Integration

- Frontend-backend integration
- Video delivery testing
- Progress sync working
- All features connected
- Bug fixes

Days 32-35: Testing Phase

- Internal testing (team)
- Bug tracking and fixes
- Performance optimization
- Device compatibility testing
- User acceptance testing prep

WEEK 6: Launch Preparation

Days 36-38: Beta Testing

- Beta release to 20 families
- Feedback collection
- Critical bug fixes
- Final content review

Days 39-40: App Store Submission

- App store assets prepared
- Descriptions written (3 languages)
- Screenshots captured
- Privacy policy finalized
- Submit to Apple App Store
- Submit to Google Play Store

Days 41-42: Marketing Launch Prep

- Landing page live
 - Social media posts scheduled
 - Press release ready
 - Email to beta users
 - Launch day plan finalized
-

15.2 Post-Launch Timeline (Months 2-6)

MONTH 2:

- Week 7-8: Monitor launch, fix bugs
- Week 9-10: First content update (2 new videos)
- Analytics review and optimization

MONTH 3:

- Week 11-12: Begin Phase 2 development (letter tracing)
- Week 13-14: Content expansion (Levels 3-4 planning)
- First marketing push

MONTH 4:

- Week 15-16: Letter tracing feature launch

- Week 17-18: Assessment system enhancement
- Partnership outreach to schools

MONTH 5:

- Week 19-20: Levels 3-4 content creation
- Week 21-22: Advanced analytics implementation
- Premium tier planning

MONTH 6:

- Week 23-24: Voice recognition feature (if viable)
 - Week 25-26: Full 6-level completion
 - Year 1 roadmap planning
-

16. GOVERNANCE & DECISION MAKING

16.1 Project Governance Structure

Decision Authority:

Strategic Decisions (You/Founder):

- Product vision and roadmap
- Budget allocation
- Team hiring
- Partnership agreements
- Pivot decisions
- Feature prioritization (final say)

Tactical Decisions (Development Lead):

- Technical architecture
- Tool selection
- Code standards
- Development methodology
- Bug priority (non-critical)

Operational Decisions (Content Lead):

- Content style and tone
- Script details
- Visual design choices
- Translation accuracy

16.2 Change Management

Feature Request Process:

1. Request logged in tracking system
2. Evaluated against project goals
3. Prioritized (critical, high, medium, low)
4. Impact assessment (time, cost, risk)
5. Decision by governance authority
6. Communication to team

Scope Change Protocol:

- Any change affecting timeline/budget requires written approval
- Impact analysis required before approval
- Team notified within 24 hours of approval
- Documentation updated

Emergency Protocol:

- Critical bugs: Fix immediately
- Security issues: Address within 4 hours
- Data loss: Immediate investigation and resolution
- App store removal threat: Emergency team meeting

16.3 Communication Plan

Daily:

- Stand-up meeting (15 minutes)
- Progress updates in shared channel
- Blocker identification

Weekly:

- Team meeting (1 hour)
- Progress review
- Next week planning
- Risk assessment

Bi-weekly:

- Stakeholder update (if applicable)
- Demo of progress
- Feedback incorporation planning

Monthly:

- Comprehensive review
 - KPI assessment
 - Budget review
 - Roadmap adjustment
-

17. MAINTENANCE & SUPPORT

17.1 Post-Launch Support

Bug Fixes:

- Critical bugs: Fix within 24 hours
- High priority: Fix within 3 days
- Medium priority: Fix within 1 week
- Low priority: Fix in next release

Content Updates:

- New videos: 2 per month minimum
- Bug fixes in existing content: As needed
- Seasonal content: Quarterly

Feature Updates:

- Minor features: Monthly
- Major features: Quarterly

- User-requested features: Evaluated and prioritized

17.2 Customer Support

Support Channels:

- In-app help documentation
- Email support: support@[appname].com
- FAQ page on website
- Social media (Facebook, Instagram)
- Response time target: 24 hours

Common Issues Handled:

- Login problems
- Progress not syncing
- Video playback issues
- Payment/subscription questions
- Content requests
- Bug reports

Escalation Path:

1. Tier 1: General inquiries (support staff)
2. Tier 2: Technical issues (developer)
3. Tier 3: Critical/security issues (technical lead)

17.3 Monitoring & Analytics

System Monitoring:

- Uptime monitoring (UptimeRobot)
- Error tracking (Firebase Crashlytics)
- Performance monitoring (Firebase Performance)
- Server health checks

User Analytics:

- Daily/Monthly Active Users
- Session duration

- Feature usage
- Content completion rates
- User journey funnels
- Retention cohorts
- Churn analysis

Business Metrics:

- Downloads (by source)
- User acquisition cost
- Conversion rates (free to premium)
- Revenue (when applicable)
- Customer lifetime value

Alerts:

- App crash rate > 1%
 - Server downtime
 - Unusual traffic patterns
 - Payment processing failures
 - Security threats
-

18. LEGAL & COMPLIANCE

18.1 Privacy & Data Protection

COPPA Compliance (Children's Online Privacy Protection Act):

- No personal information collected from children without parental consent
- Parents provide consent during account creation
- Clear privacy policy accessible before signup
- No behavioral advertising
- Option to review/delete child's data
- Secure data transmission and storage

GDPR Considerations (if expanding to EU):

- Right to access data
- Right to erasure
- Data portability
- Consent management
- Data breach notification

Sri Lankan Data Protection Laws:

- Comply with local regulations
- Consult legal expert for specific requirements

18.2 Terms of Service

Key Provisions:

- Age requirements (parent must be 18+)
- Acceptable use policy
- Content ownership (company owns platform, user owns uploads)
- Limitation of liability
- Dispute resolution
- Termination rights
- Subscription terms (if applicable)

18.3 Content Licensing

Original Content:

- All videos, images, scripts owned by company
- Proper licensing for any third-party content
- Music properly licensed (royalty-free or licensed)

User-Generated Content:

- Parent grants license for uploaded photos
- Company can use for improvement/testimonials (with consent)
- Parents can delete uploads at any time

18.4 Intellectual Property

Trademarks:

- App name trademarked
- Logo trademarked
- Tagline (if applicable)

Copyright:

- All original content copyrighted
- Copyright notices in app and materials

Patents:

- Consider patent for unique learning methodology (optional, expensive)

18.5 Liability & Insurance

Disclaimers:

- Educational supplement, not replacement for formal education
- Parent supervision required for physical activities
- Not liable for injury during real-world activities
- No guarantee of specific learning outcomes

Insurance (Consider):

- General liability insurance
 - Cyber liability insurance
 - Errors & omissions insurance
-

19. MONETIZATION STRATEGY

19.1 Revenue Models

Phase 1 (Launch - Month 6): Freemium

Free Tier:

- Levels 1-2 (My Morning, Meal Time)
- 10 life skills videos
- Basic letter introduction
- Simple progress tracking

- Limited badges

Premium Tier (\$4.99/month or \$39.99/year):

- All 6 levels
- 30 life skills videos
- Complete letter curriculum with tracing
- Advanced games and activities
- Detailed analytics
- Downloadable activity guides
- Voice recognition features
- Ad-free experience
- Priority support

Phase 2 (Month 7+): Multiple Revenue Streams

Consumer (B2C):

- Individual subscriptions
- Family plan (up to 3 children): \$6.99/month
- Lifetime access: \$99.99 one-time

Institutional (B2B):

- Preschool license: \$199/year (up to 30 children)
- Kindergarten license: \$399/year (up to 50 children)
- School district license: Custom pricing

Additional Revenue:

- Printed activity books: \$9.99
- Physical learning kits: \$29.99
- Parent workshop access: \$19.99
- Certification program for educators: \$49.99

19.2 Pricing Strategy

Free Trial:

- 7-day free trial of premium tier

- No credit card required
- Full feature access during trial

Promotional Pricing:

- Launch discount: 50% off first month
- Referral program: 1 month free for referrer and referee
- School year special: 20% off annual subscription

Regional Pricing:

- Adjust for Sri Lankan market (consider local purchasing power)
- Potentially lower price than international equivalents

19.3 Financial Projections (Year 1)

Conservative Scenario:

- Month 3: 10,000 users, 2% conversion = 200 paid users
- Month 6: 30,000 users, 3% conversion = 900 paid users
- Month 12: 80,000 users, 5% conversion = 4,000 paid users
- Monthly revenue (M12): \$19,960 ($\$4.99 \times 4,000$)
- Annual revenue: ~\$120,000

Costs:

- Development (Year 1): \$50,000
- Infrastructure: \$3,000
- Marketing: \$10,000
- Operations: \$12,000
- **Total costs: \$75,000**
- **Net: \$45,000 profit**

Optimistic Scenario:

- Month 12: 150,000 users, 8% conversion = 12,000 paid
- Monthly revenue: \$59,880
- Annual revenue: ~\$360,000
- Net profit: ~\$285,000

20. COMPETITIVE ANALYSIS

20.1 Direct Competitors (Sri Lankan Market)

Nenasa (Dialog):

- **Strengths:** Free, government partnership, school curriculum-aligned, TV integration
- **Weaknesses:** Limited interactivity, traditional academic focus, not pre-school specific
- **Our Advantage:** Pre-school focus, life skills, better UX, more engaging

Hapan - Kids Sinhala Learning:

- **Strengths:** Focused on Sinhala, interactive, popular
- **Weaknesses:** Single language, basic graphics, limited content
- **Our Advantage:** Trilingual, comprehensive, modern design, life skills

DP Education:

- **Strengths:** Large content library, established brand
- **Weaknesses:** School-focused, less engaging for pre-schoolers, traditional approach
- **Our Advantage:** Age-appropriate, engaging, modern methodology

20.2 Indirect Competitors (International Apps Used in SL)

Khan Academy Kids:

- **Strengths:** High quality, free, comprehensive
- **Weaknesses:** US-focused content, English-only, not culturally relevant
- **Our Advantage:** Culturally relevant, trilingual, local context

ABCmouse:

- **Strengths:** Comprehensive curriculum, high production value
- **Weaknesses:** Expensive, US-focused, requires good internet
- **Our Advantage:** Sri Lankan context, affordable, life skills focus

20.3 Competitive Positioning

Our Unique Value Proposition: "The only app that prepares Sri Lankan children for school AND life through authentic trilingual learning"

Differentiators:

1. **Life Skills Focus:** Practical activities parents see value in immediately
2. **Authentic Trilingual:** Not translation, but integrated learning
3. **Real-World Connection:** Videos encourage actual practice
4. **Cultural Relevance:** Sri Lankan context, values, examples
5. **Parent Involvement:** Built-in verification, guides
6. **Age-Specific:** Designed for 4-6, not broad age range

Market Positioning:

- Premium quality at affordable price
 - Educational effectiveness + engagement
 - Technology + tradition (respects local culture)
 - Screen time that parents feel good about
-

21. EXIT STRATEGY & LONG-TERM VISION

21.1 Long-Term Vision (3-5 Years)

Year 1: Establish in Sri Lankan pre-school market **Year 2:** Expand to primary school content (ages 7-10) **Year 3:** Regional expansion (India, Bangladesh, Pakistan) **Year 4:** Additional languages, franchise model **Year 5:** Become leading South Asian EdTech platform

21.2 Potential Exit Strategies

Option 1: Acquisition

- Potential acquirers: Large EdTech companies, telecom operators (Dialog, SLT), education publishers
- Timeline: 3-5 years
- Target valuation: Based on user base and revenue

Option 2: Merger

- Merge with complementary EdTech company
- Create larger platform with broader offering

Option 3: Sustained Independence

- Build profitable, sustainable business

- Focus on long-term value creation
- Potential dividend distribution to founders

Option 4: Licensing Model

- License platform to other markets
- White-label solution for schools/publishers

21.3 Scaling Opportunities

Content Expansion:

- More age groups (toddlers, primary school)
- More subjects (math, science, arts)
- Special needs education
- Parent education content

Geographic Expansion:

- Indian states with Sinhala/Tamil speakers
- Sri Lankan diaspora globally
- Other South Asian countries
- Adaptation for other languages

Product Expansion:

- Physical products (activity kits, books)
- Live tutoring platform
- School management system integration
- Assessment and certification programs

B2B Expansion:

- School licensing
- Government contracts
- Corporate CSR partnerships
- NGO collaborations

22. APPENDICES

Appendix A: Glossary

Key Terms:

- **MVP:** Minimum Viable Product - basic version with core features
- **MAU:** Monthly Active Users
- **DAU:** Daily Active Users
- **CDN:** Content Delivery Network
- **COPPA:** Children's Online Privacy Protection Act
- **TTS:** Text-to-Speech
- **UI:** User Interface
- **UX:** User Experience
- **API:** Application Programming Interface
- **KPI:** Key Performance Indicator

Appendix B: References

Educational Standards:

- Montessori Method guidelines
- Finnish Early Education framework
- Sri Lankan National Curriculum (Early Years)

Technical Documentation:

- React Native documentation
- Firebase documentation
- Google Cloud TTS API documentation

Market Research:

- Sri Lankan mobile usage statistics
- EdTech market reports
- Child development research

Appendix C: Contact Information

Project Team:

- Project Lead: [Your contact]

- Technical Lead: [Developer contact]
- Content Lead: [Content creator contact]

External Resources:

- Early Childhood Education Consultant: [TBD]
- Legal Advisor: [TBD]
- Marketing Consultant: [TBD]

Appendix D: Document History

Version 1.0 - October 9, 2025:

- Initial BRD creation
- All sections completed
- Ready for team review and approval

Next Review Date: October 16, 2025 (after Week 1)

APPROVAL & SIGN-OFF

Document Prepared By: Name: _____ Role: Product Owner Date: _____

Reviewed By: Name: _____ Role: Technical Lead Date: _____

Approved By: Name: _____ Role: Project Sponsor Date: _____

END OF BUSINESS REQUIREMENTS DOCUMENT

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