

ENVISIONING TEACHHUB: DESK RESEARCH AND NEEDS ANALYSIS REPORT



RESULT 2: E-HUB FOR EDUCATION AND SHARING OPEN EDUCATIONAL RECOURSES

ACCESSIBLE DIGITAL EDUCATION FOR LEARNERS WITH AUTISM AND INTELLECTUAL
DISABILITIES: INNOVATING SOLUTIONS AND ENHANCING EDUCATORS' COMPETENCES (ISEC-
ADE)

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BACKGROUND

In today's rapidly evolving world of education, technology plays a crucial role. The TeachHub project is taking a bold step to make sure that learners with autism aren't left behind in this digital transformation. Aligned with the Digital Education Action Plan (2021-2027, EC), TeachHub envisions a digital space where educators, therapists, and learners can come together—an E-hub designed specifically to support students with autism.

TeachHub is envisioned as an innovative web application designed to empower educators by providing a centralized platform for collaboration, resource sharing, and professional development. The platform is intended to serve as an E-hub for education, focusing on open educational resources (OER) and community engagement.

This report marks the beginning of the Software Development Life Cycle (SDLC) for Result 2 of the TeachHub project—the creation of the E-hub. The E-hub aims to be a collaborative platform, tailor-made for educators and therapists, focusing on the unique needs of learners with autism. The insights gathered from needs analysis surveys and desk research form the backbone of this report, steering the design and features of the E-hub.

As we dive into the report, we uncover what educators and therapists have expressed through extensive surveys and discussions. The report navigates through their expectations, preferences, and concerns, providing a foundation for the upcoming stages of the SDLC.

We explore the various motivations prompting active participation in the E-hub, ranging from a desire for professional recognition to the practical benefits of shared resources. Additionally, we look into the constructive suggestions and expectations shared by the education community, highlighting the importance of collaboration, continuous learning, and user-friendly interfaces.

This report not only guides the development of the E-hub but also sets the stage for a platform aspiring to become a vibrant space for open educational resources, a catalyst for professional growth, and a thriving community hub. As we embark on this transformative journey, the TeachHub project remains dedicated to making the vision of an inclusive, digitally empowered educational ecosystem a reality.

PART 1. DESK RESEARCH

INTRODUCTION TO THE DESK RESEARCH

In laying the foundation for the TeachHub project, a meticulous Desk Research phase was undertaken, guided by a comprehensive protocol designed to unveil insights crucial for the development of the E-hub. Aligned with the research objectives and questions outlined in the protocol, this section unfolds the discoveries derived from an extensive exploration of existing e-learning platforms, teacher communities, and Open Educational Resource (OER) repositories.

Our primary objectives were clear: identify successful e-learning platforms, scrutinize their features, comprehend the challenges they grapple with, and extract best practices relevant to our mission. Through a systematic examination of online platforms, educational publications, and reports from governmental and educational organizations, we aimed to construct a comprehensive understanding of the landscape in which TeachHub will thrive.

The structured methodology employed in this research involved systematic reviews of academic databases, exploration of online platforms, and analysis of reports and surveys. Ethical considerations were paramount, ensuring compliance with data usage policies and protection of the privacy and anonymity of individuals engaged in existing platforms.

As we delve into the findings, we embrace the insights garnered from various sources, serving as the guiding compass for the subsequent stages of the TeachHub development. This synthesis of information lays the groundwork for an E-hub that not only reflects theoretical ideals but is deeply rooted in the practical wisdom distilled from the collective experiences of educators and the broader educational community.

DESK RESEARCH RESULTS: INSIGHTS FOR TEACHHUB DEVELOPMENT

The desk research protocol for TeachHub development involved a comprehensive review of various e-learning platforms, with a particular focus on those supporting teacher empowerment and Open Educational Resource (OER) exchange. The analysis included platforms such as ARASAAC, Autism Educators, OER Commons, Share My Lesson, and Teachers Pay Teachers (TpT). Table 1 presents the key findings and implications from each platform.

Platform name	Key Features	Implications for TeachHub
ARASAAC	<p>Specialized focus on Augmentative and Alternative Communication (AAC) resources.</p> <p>Open access and Creative Commons licensing for materials.</p> <p>Multilingual support and community collaboration.</p>	<p>Consider offering specialized resources for various educational needs.</p> <p>Embrace open access and collaboration features.</p> <p>Explore multilingual support for inclusivity.</p>
Autism Educators	<p>Niche focus on autism education resources.</p> <p>Diverse content, including free and paid resources.</p> <p>Community building and professional development focus.</p>	<p>Prioritize content specialization for autism education.</p> <p>Foster community support and collaboration.</p> <p>Implement quality control mechanisms for resource effectiveness.</p>
OER Commons	<p>Centralized hub for discovering, sharing, and collaborating on OER.</p>	<p>Adopt a similar approach for resource discovery and collaboration.</p>

	<p>Advanced search functionalities and collaboration features.</p> <p>Emphasis on accessibility, inclusivity, and alignment with standards.</p>	<p>Prioritize accessibility and inclusivity for diverse learners.</p> <p>Align resources with relevant standards in special education.</p>
Share My Lesson	<p>Resource marketplace model for educators.</p> <p>Diverse content, free access, and user reviews.</p> <p>Community building, collaboration, and professional development.</p>	<p>Consider adopting a marketplace model for educators.</p> <p>Emphasize community building and collaboration.</p> <p>Implement a review and rating system for quality control.</p>
Teachers Pay Teachers (TpT)	<p>Marketplace for buying and selling educational resources.</p> <p>Monetization through resource sales.</p> <p>Community building, user reviews, and diverse content.</p>	<p>Consider a marketplace model with incentives for contributors.</p> <p>Prioritize community building and quality control.</p> <p>Ensure a diverse range of resources for autism education.</p>

Cross-Platform Insights for TeachHub Development	
Common Themes	Differentiating Factors
<p>Community building is crucial for fostering collaboration among educators.</p> <p>Review and rating systems contribute to quality control.</p> <p>User-friendly interfaces enhance the overall experience.</p>	<p>Business models vary (open access vs. marketplace), each with unique implications.</p> <p>Incentives for contributors differ, ranging from monetary rewards to community recognition.</p>

TeachHub adopts an open and free business model, rooted in the principles of Open Educational Resources (OER) and accessibility. This contrasts with marketplace models found in other platforms. The emphasis on openness and accessibility shapes the nature of resource sharing within the TeachHub community. Incentives for contributors on TeachHub differ significantly from models involving monetary rewards. Instead, TeachHub focuses on non-monetary incentives, such as community recognition and collaborative knowledge sharing. This aligns with the platform's commitment to open access and community-driven collaboration.

While custom copyright licenses can be developed to facilitate the development and use of OER, often it can be easier to apply free-to-use standardized licenses developed specifically for that purpose, such as those developed by Creative Commons or – for software – those approved by the Open Source Initiative.

Hosting Open Educational Resources (OER) in online platforms involves considerations to ensure accessibility, usability, and effective sharing. Here are some best practices:

1. **Open Licensing:** Use open licenses, such as Creative Commons, to clearly communicate the permissions and restrictions of the resources. This allows educators to understand how they can use, share, and modify the content.
2. **Clear Metadata and Descriptions:** Provide clear metadata and detailed descriptions for each resource. Include information such as educational objectives, target audience, and suggested use. This helps users discover relevant content easily.
3. **Searchable and Categorized Content:** Implement a robust search and categorization system to make it easy for users to find specific resources. Tags, keywords, and well-organized categories contribute to effective content discovery.
4. **User Feedback and Ratings:** Allow users to provide feedback and ratings for resources. This helps build trust among educators, and high-rated resources can be highlighted, indicating quality.
5. **Collaboration Features:** Integrate collaboration features to enable educators to work together on resource development. This can include version control, commenting, and collaborative editing tools.
6. **Versioning and Updates:** Implement versioning for resources to track changes over time. Clearly communicate updates, and consider providing changelogs to inform users about modifications or additions.
7. **Integration with Learning Management Systems (LMS):** Enable integration with popular learning management systems, making it seamless for educators to incorporate OER into their courses and lesson plans.
8. **Usage Analytics:** Implement analytics tools to track resource usage. This data can provide insights into which resources are most popular, helping educators and platform administrators make informed decisions.
9. **Legal and Ethical Considerations:** Clearly communicate the terms of use, giving proper attribution to authors and respecting copyright and licensing agreements. Ensure that hosted content complies with relevant laws and ethical standards.
10. **Responsive Design:** Ensure that the platform has a responsive design, making it accessible and user-friendly across various devices, including desktops, tablets, and smartphones.
11. **Security Measures:** Implement robust security measures to protect user data and hosted content. This includes secure authentication, encryption, and regular security audits.
12. **Regular Maintenance and Updates:** Regularly maintain and update the platform to fix bugs, improve performance, and add new features. Keeping the platform current enhances user experience.
13. **Community Engagement:** Foster a sense of community by encouraging user engagement. This can be achieved through discussion forums, user groups, or collaborative initiatives that involve educators in the platform's development.

By adhering to these best practices, online platforms hosting OER can create a conducive environment for educators to discover, share, and contribute to open educational resources effectively.

Although there are important differentiating factors between TeachHub and the reviewed platforms, there are common themes that can help inform the development of the app.

1. **Community Building:** Regardless of business models, community building remains a foundational aspect. Establishing a collaborative environment where educators can connect, share insights, and collectively contribute is crucial. TeachHub can prioritize features such as forums and collaborative spaces to foster a supportive community.
2. **Review and Rating Systems:** Quality control through review and rating systems is a shared theme. While the specific dynamics may differ, the need for continuous improvement and the assurance of resource quality remain essential. TeachHub should implement a robust system that aligns with the principles of OER and community-driven feedback.
3. **User-Friendly Interfaces:** Irrespective of business models, the importance of a user-friendly interface is universal. TeachHub should prioritize an intuitive design to enhance the overall user experience. This includes easy resource discovery, navigation, and contribution tools, ensuring accessibility for educators.

In summary, while TeachHub's unique model and contributor incentives distinguish it from other platforms, the common themes of community building, quality assurance, and user-friendly interfaces remain essential for the development of an effective and impactful educational app.

RECOMMENDATIONS

In light of the findings derived from the desk research, we posit the ensuing recommendations that warrant due consideration during the formulation of the System Requirements Specification (SRS) and Design Document Specification (DDS).

1. **Community-Centric Approach:**
 - Prioritize features that foster collaboration and community building.
 - Implement forums, discussion boards, and collaborative spaces.
2. **Quality Control Mechanisms:**
 - Introduce a robust review and rating system for shared resources.
 - Consider community-driven quality assurance mechanisms.
3. **Diverse and Specialized Content:**
 - Ensure a diverse range of resources specifically tailored to autism education.
 - Encourage contributors to provide specialized content.



4. User-Friendly Interface:

- Prioritize an intuitive and user-friendly platform for easy resource discovery.
- Enhance the overall user experience for educators.

5. Incentives for Contributors:

- Explore non-monetary incentives such as community recognition, badges, or certifications.
- Encourage active participation and resource contribution.

6. Flexibility and Adaptability:

- Allow flexibility in the platform's structure to adapt to emerging insights.
- Continuously seek feedback from the user community for improvements.

SUMMARY

In summary, the desk research provides valuable insights into the features and functionalities that can contribute to the successful development of TeachHub. By combining elements of community engagement, quality control, and a user-centric approach, TeachHub can become a vibrant and effective platform for educators in the field of accessible education.

PART 2. NEEDS ANALYSIS

INTRODUCTION TO THE NEEDS ANALYSIS

The second phase of our journey delves into the specific needs and expectations of educators, therapists, and learners through an in-depth Needs Analysis. This involved direct engagement with the key stakeholders—educators and therapists—who are at the forefront of implementing digital education strategies for learners with autism.

The Needs Analysis section is a testament to our commitment to a user-centric approach. By conducting surveys and focus group interviews, we aimed to unravel the motivations, challenges, and aspirations of the educational community. Their valuable input forms the cornerstone for shaping the features and functionalities of the E-hub.

As we traverse through the findings of the Needs Analysis, we gain insights into what truly matters to educators and therapists when it comes to leveraging digital tools for teaching students with autism. The richness of this qualitative data fuels the subsequent stages of the Software Development Life Cycle, steering the design and development of the E-hub towards meeting real-world needs.

RESULTS

GENERAL INFORMATION

The survey captured a diverse pool of respondents, with 57.4% (27) from North Macedonia, 25.5% (12) from Greece, 2.1% (1) from Cyprus, and 14.9% (7) from Bulgaria, amounting to a total of 47 participants.

PROFESSIONAL BACKGROUND

In terms of professional roles, educators represented a varied landscape, comprising 17% teachers (8), 23.4% special educators (11), 4.2% school therapists (2), 46.8% educational assistants (22), and 8.5% with roles including pedagogues, Ph.D. candidates in education, and psychologists (4).

Regarding professional experience, respondents had diverse tenure, with 12.8% (6) having less than 1 year, 46.8% (22) with 1-5 years, 17% (8) with 6-10 years, and 23.4% (11) with more than 10 years in their current roles.

CURRENT USE OF DIGITAL COMMUNITIES/PROFESSIONAL COLLABORATIVE NETWORKS/OER PLATFORMS

This section investigated the current utilization of digital technologies and online platforms among educators, focusing on communication, collaboration, and the sourcing of digital Open Educational Resources (OER).

The majority of respondents, constituting 63.8% (30), reported using digital technologies daily for communication, collaboration, and professional development. Weekly engagement was observed among 29.8% (14) of the respondents, highlighting a consistent reliance on digital tools throughout the week. Monthly usage was indicated by 4.3% (2), suggesting infrequent but recurring use. Rare usage was reported by 2.1% (1), while none of the respondents indicated never using digital technologies.

Insights into the motivations for using websites or platforms revealed that 36.2% (17) of respondents considered sharing their instructional materials a primary reason. Sourcing, adapting, and modifying OER emerged as a prominent motivation, with 72.3% (34) identifying it as a primary reason, underscoring the significance of adaptability in teaching materials. Learning from other educators/therapists was considered a primary reason by 70.2% (33) of respondents, emphasizing the importance of collaborative learning within digital communities.

The respondents mentioned a variety of websites and platforms they use for sourcing digital OER for teaching or therapy practice. A variety of platforms were mentioned, including general educational platforms [OER Commons](#), [Teachers Pay Teachers](#), [Word Wall](#), [Share My Lesson](#); platforms specific to national education systems such as [Eduino](#), [Materijali Za Nas](#), [Prosvasimo](#), [Digital School](#), [Upbility](#), [Inaku](#), [Nikulec Edukacija](#), [Step By Step](#); platforms specific to learners with autism or other specific conditions such as [ARASAAC](#), [Autism Educators](#), [National Autistic Society](#), [Autism Institute](#), [Sina Svetulka](#), [ITSS-LAII](#), [MSSA](#). Digital education tools such as [Night Zookeeper](#), [Twinkl](#), [Book Creator](#) as platforms for interactive quizzes and educational games were highlighted. Some respondents mentioned general search engines such as Google, Youtube, and Social media platforms such as Pinterest and Facebook.

REQUIREMENTS FOR A QUALITY E-HUB

The investigation into the requirements for a quality E-hub focused on the perceived importance of specific features and functionalities crucial for its effectiveness.

Respondents were asked to assess the significance of having a page that features authors and their work on the E-hub. A unanimous 100% of respondents found this feature valuable, with 23 (48.9%) considering it very important, 21 (44.7%) important, and 3 (6.4%) indicating it as somewhat important. None of the respondents perceived this feature as not important, indicating a consensus on its value for enhancing the credibility, trustworthiness, and collaborative aspects of the E-hub.

Exploring the perceived benefits of reading blogposts by educators on the E-hub discussing their projects and sharing their experiences, the responses demonstrated a strong endorsement of this feature. A total of 33 (70.2%) respondents found it very beneficial, 13 (27.7%) considered it

beneficial, and 1 (2.1%) found it somewhat beneficial, emphasizing the perceived value of educators' experiences and projects shared through this medium.

The importance of the E-hub offering guidelines for creating accessible digital content for learners with autism and intellectual disabilities was examined. A substantial 80.9% of respondents, representing 38 individuals, considered this feature very important. Additionally, 8 (17%) respondents found it important, 1 (2.1%) indicated it as somewhat important, and none deemed it not important. This result underscores the consensus among respondents regarding the crucial role of accessibility guidelines in the E-hub.

In response to questions 4.4 ("What types of professional development or training do you believe should be provided to educators and therapists through the E-hub?") and 4.5 ("What other features or functionalities would you like to see in the E-hub?") educators articulated their aspirations for the E-hub, emphasizing common themes such as the imperative for professional development, a preference for interactive and accessible resources, a desire for real-world implementation examples, and the importance of fostering a supportive community within the platform.

1. **Professional Development:** Both questions prominently feature the theme of professional development. In Question 4.4, educators explicitly mention workshops, training sessions, seminars, and practical training. In Question 4.5, they express a desire for features that contribute to professional growth, including obtaining professional certificates and experience in direct work with autism and special education needs (SEN) children.
2. **Practical Training and Workshops:** Practical training emerges as a consistent theme. Educators in both questions emphasize the importance of practical training, suggesting a preference for hands-on, applicable learning experiences. This aligns with their desire to see real examples and engage in practical workshops.
3. **Discussion Groups:** Discussion groups are mentioned in both questions as a desired feature. Educators express an interest in forums where they can engage in discussions, share experiences, and seek advice. This theme underscores the importance of collaborative learning and a sense of community within the E-hub.
4. **Certification and Accreditation:** Certification and accreditation are common themes. In Question 4.4, educators express interest in certified professional development with the possibility of formal accreditation. In Question 4.5, they mention obtaining professional certificates as a feature they would like to see in the E-hub.
5. **Versatile Educational Content:** Educators express a desire for versatile educational content in both questions. In Question 4.4, they mention a need for various types of educational levels, including the lower and higher grades. In Question 4.5, the desire for versatile features is evident in their interest in accessible tools, materials, and open access to resources.

These common themes suggest that educators seek a comprehensive E-hub that provides diverse, practical, and certified professional development opportunities. The emphasis on collaboration and discussion further highlights their interest in a platform that fosters a community of learning and knowledge-sharing.

MOTIVATION AND ENCOURAGEMENT

This section delves into the factors related to motivation and encouragement that may influence educators' and therapists' engagement with the E-hub.

Regarding the potential interest in a certification service based on the European Framework for the Digital Competence of Educators, an overwhelming majority of respondents 93.6% (44) expressed their interest, while only 6.4% (3) indicated otherwise. This substantial interest suggests a keen desire among users to have their engagement formally recognized and aligned with established digital competence standards.

When assessing the perceived impact of a system of badges or recognition for active contributors, the responses were diverse. None of the respondents strongly disagreed (0%), 6.4% (3) disagreed, 57.4% (27) agreed, and 34% (16) strongly agreed. This indicates a generally positive inclination toward the effectiveness of such a motivational system in encouraging engagement with the E-hub.

Regarding the effectiveness of community-building activities or events in fostering a sense of belonging and motivation, none of the respondents considered it not effective (0%). Instead, 4.3% (2) found it somewhat effective, 40.4% (19) considered it effective, and a substantial 55.3% (26) deemed it very effective. This underscores the perceived importance of fostering a supportive and engaging community within the E-hub.

When assessing the importance of featuring success stories or case studies of educators benefiting from the E-hub, 63.8% (30) viewed it as very important, 27.7% (13) considered it important, and 6.4% (3) found it somewhat important. None of the respondents deemed it not important (0%). This strong consensus underscores the perceived value of showcasing tangible successes to motivate and inspire other users.

The responses to Question 5.5 ("What incentives or rewards would motivate you to actively participate in the E-hub, such as sharing your digital resources or engaging with others?") illustrate a variety of incentives and rewards that would motivate educators to actively participate in the E-hub, emphasizing diverse motivations:

1. Certificates and recognition: the most frequently mentioned incentive is the desire for certificates. Respondents express that receiving certificates and recognition for their engagement and contributions would serve as a significant motivator.

2. Usefulness of resources: an essential incentive for participation is the perceived usefulness of resources for teachers and learners. Educators highlight that if their digital resources prove beneficial, it would be a substantial motivator.
3. Professional development and progress: motivation is derived from the potential for professional progress and development. Respondents express that active engagement, leading to both personal and professional development, would be a motivating factor.
4. Positive experiences and advice: positive experiences from colleagues, along with the opportunity to receive advice on work and learn new things and skills, are identified as motivating factors. Collaborative and supportive interactions contribute to a positive motivational environment.
5. Financial and tangible rewards: some respondents mention financial rewards, scholarships, and access to technological equipment as incentives. The prospect of tangible benefits beyond certificates, such as financial rewards and scholarships, is acknowledged.
6. Participation in conferences and networking: participation in conferences, access to resources, and the opportunity to engage with a global community are mentioned as potential incentives. The social aspect, including networking and communication with professionals worldwide, is highlighted.
7. Entertainment and self-teaching: the e-hub is viewed as an opportunity for entertainment and self-teaching. Respondents express the potential enjoyment of the platform and the chance to discover new ideas and get involved in activities that interest them.
8. Access to digital resources for students: a notable incentive is the possibility of accessing digital resources created by others to help students. Educators appreciate the convenience of sharing resources and reducing the time-consuming task of creating materials from scratch.

Overall, the responses indicate that educators are motivated by a combination of professional recognition, developmental opportunities, the impact of their contributions, and tangible benefits. The multifaceted nature of these incentives reflects the diverse motivations that drive active participation in the E-hub.

Users' additional comments, suggestions, and concerns about the development of TeachHub include:

1. Importance of Collaboration: Users emphasize the value of collaboration and sharing experiences with colleagues, expressing that it is crucial for accomplishing more and is considered a significant reward for educators. One user proposes the creation of a Viber group for global cooperation with educators from abroad, emphasizing an international collaborative aspect.

2. Training and Meetings: Some users suggest having regular training, seminars, or meetings, possibly weekly, to support continuous professional development.
3. Clarity and Usability: Users highlight the importance of easy access, clear instructions, and usability, emphasizing the need for a platform that is user-friendly.
4. Support for the Initiative: Positive feedback is provided, commending the initiative and expressing excitement about its implementation.

These comments collectively stress the significance of collaboration, training opportunities, global networking, and the user-friendliness of TeachHub.

SUMMARY

In summary, the findings revealed a prevalent and regular use of digital technologies and online platforms among educators for communication, collaboration, and sourcing OER, underscoring the integral role of these digital tools in the professional practices of the surveyed individuals.

The educators highlighted unanimous agreement on the importance of featuring authors and their work, emphasizing its value in enhancing the credibility and collaborative nature of the E-hub. Additionally, strong endorsement was observed for blogposts by educators, indicating their perceived benefit in sharing experiences and projects. The significance of providing guidelines for accessible digital content was also emphasized, with the majority of respondents deeming it very important for the E-hub's effectiveness.

The respondents revealed a high level of interest in certification services, positive sentiments toward systems of recognition, and a strong belief in the effectiveness of community-building activities. Additionally, they emphasized the importance of featuring success stories as a powerful motivational tool within the E-hub. Educators express a multifaceted motivation, indicating that a combination of professional recognition, developmental opportunities, impact on students, and tangible benefits drive their active participation. The desire for collaboration, regular training, and user-friendly design also emerges as critical considerations.

These findings suggest that designing TeachHub should prioritize features related to professional development and certification, resource usefulness and global networking. Additionally, fostering a supportive community, incorporating practical training, and ensuring a user-friendly interface are crucial for the platform's success. By incorporating these recommendations, TeachHub can evolve into a dynamic and effective platform that supports educators, promotes collaboration, and facilitates the exchange of high-quality educational resources.



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(ISEC-ADE) Accessible digital education for learners with autism and intellectual disabilities: Innovating solutions and enhancing educators' competences
Result 2: E-hub for education and sharing open educational recourses



REFERENCES:

<https://elearningindustry.com/unleashing-the-potential-of-oer-the-advantages-and-challenges-of-open-learning-materials>

<https://iite.unesco.org/mainstreaming-open-educational-resources/>

<https://oercommons.org/>

<https://arasaac.org/>

<https://autismeducators.com/>

<https://www.teacherspayteachers.com/>

<https://sharemylesson.com/>