


Research Article

Revolutionizing Equivalency Education: The Impact of EquivaLearn on Tutor Performance and Student Engagement

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Abstract: *EquivaLearn is a comprehensive application developed to enhance the implementation of the equivalency education program in Sabah-Sarawak, Malaysia. This research article investigates the impact of EquivaLearn on tutor performance and student engagement in the program. The study employed a mixed methods approach, combining quantitative data from surveys and qualitative data from in-depth interviews with tutors and students. The findings revealed positive feedback and satisfaction with the application's accessibility, technical assistance, user interface, user experience, functionality, advantages, and efficiency. The survey results indicated that the majority of respondents agreed or strongly agreed with the effectiveness of EquivaLearn in various aspects. The application's features, such as attendance tracking, learning activity journals, resource downloads, and e-modules, were found to contribute to improved tutor monitoring, tutor management, access to learning resources, and overall program outcomes. The qualitative data provided valuable insights into the participants' experiences and perceptions, highlighting the convenience, support, and enhanced learning experience facilitated by EquivaLearn. The study concludes that EquivaLearn has a positive impact on tutor performance and student engagement in the equivalency education program, empowering tutors, students, and education administrators. Further feedback and analysis from a broader user base are recommended to refine the application and address any areas for improvement.*

Keywords: *EquivaLearn, equivalency education, tutor performance, student engagement*

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1. INTRODUCTION

In today's digital era, information and communication technology play a crucial role in various aspects of life, including education. One specific area of education is the equivalency education program served by PKBM KJRI Kota Kinabalu, Sabah, Malaysia. This program caters to a significant number of tutors and students, with 71 tutors and 928 students currently enrolled in Sabah and Sarawak. The program operates through Community Learning Centers (CLCs) located in different regions of Sabah and Sarawak, where teaching and learning activities take place, while administrative functions are managed at Sekolah Indonesia Kota Kinabalu. In Indonesia, individuals engaging in non-formal education are individuals who strive to enhance their own capabilities through the instructional process offered by the equivalency education program. The government endeavors to achieve an equitable distribution of educational opportunities by

providing this program, aiming to enhance and broaden access to education for all (Yel, M. B., & Sfenrianto, S. , 2017, September).

The equivalency education program focuses on delivering non-formal education through general education programs, including Package A (equivalent to primary school), Package B (equivalent to junior secondary school), and Package C (equivalent to senior secondary school). To enhance the effectiveness of monitoring and management in this program, a dedicated application named EquivaLearn has been developed.

EquivaLearn serves as a comprehensive tool that facilitates efficient monitoring and administration of the equivalency education program. The application offers features such as tutor and student attendance tracking, learning activity journals, learning documentation, resource downloads, and e-modules. Developed using the AppSheet platform, EquivaLearn adopts a no-code development approach, enabling users to create mobile, tablet, and web applications using data sources like Google Drive, Dropbox, Office 365, spreadsheets, and other cloud-based databases (Sahay, A., Indamutsa, A., Di Ruscio, D., & Pierantonio, A. (2020, August). Moreover, the application operates online, necessitating a stable internet connection for seamless functionality (Petrović, N., Roblek, V., Radenković, M., & Nejković, V. (2020, October).

The introduction of EquivaLearn aims to optimize the implementation of the equivalency education program in Sabah and Sarawak, facilitating improved monitoring, enhanced collaboration, and efficient management. The application empowers tutors, students, and education administrators to track attendance, record learning activities, capture learning progress, access learning resources, and foster a seamless educational experience. Ultimately, EquivaLearn strives to contribute to the advancement and success of the equivalency education program, benefiting both tutors and students on their educational journeys.

2. MATERIAL & METHOD

2.1 *Development of Equivalearn Application*

The EquivaLearn application was developed using the AppSheet platform, which was chosen as the development platform for several reasons. Firstly, AppSheet-based mobile applications have gained recognition as effective solutions in various fields (Petrović, N., Roblek, V., Radenković, M., & Nejković, V. ,2020). The versatility and functionality of these applications have been acknowledged and utilized across different industries and sectors. According to Faiz, M., & Bakar, A. M. K. (2020), Whether in education, healthcare, finance, logistics, Inspections & Surveys, Field Service, Property Management, Inventory Management or other domains, AppSheet-based mobile applications have demonstrated their effectiveness in streamlining processes, enhancing productivity, and improving user experiences. It employs highly efficient methods for optimizing evaluation processes, aiming to maximize the utilization of human effort (Quinn, A. J., & Bederson, B. B. (2022).

Secondly, AppSheet offers a user-friendly interface that simplifies the application development process. This user-friendly interface allows developers to create and customize the application without requiring extensive coding knowledge or skills (Malik, K. Q. ,2021).

Additionally, AppSheet provides seamless integration with a wide range of data sources, including popular cloud storage platforms such as Google Drive, Dropbox, and Office 365. This integration capability enables the EquivaLearn application to access and utilize data from these

sources efficiently. Moreover, the application can also integrate with spreadsheets and other cloud-based databases, further enhancing its data management capabilities.

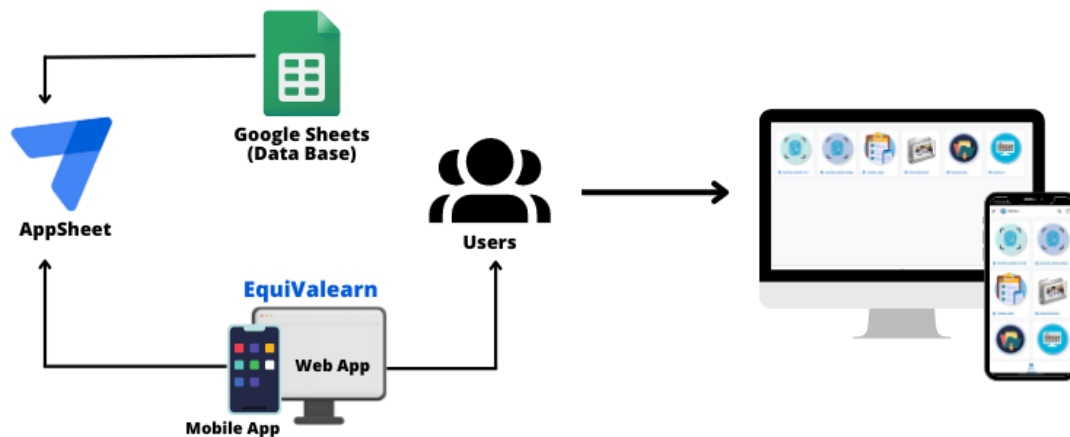


Figure 1. This is the development of Equivalearn Application

2.2 Study Design

The research methodology employed in this study adopted a mixed methods approach, combining both quantitative and qualitative methods, as advocated by Creswell (1994). This approach was chosen to facilitate a comprehensive understanding of the research topic and to generate new insights. Furthermore, Bulsara (2015) highlights that the use of a mixed methods approach enables researchers to examine research questions from multiple perspectives, enhancing the richness and depth of the study.

By utilizing this mixed methods approach, the study was able to explore various facets of the EquivaLearn application and assess its impact on the equivalency education program. Both tutors and students enrolled in the program at PKBM KJRI Kota Kinabalu, Sabah, Malaysia, were actively involved in the research. This allowed for a comprehensive examination of the application's effectiveness and its implications for the educational program.

The quantitative component of the study involved gathering numerical data through surveys, while the qualitative component involved conducting in-depth interviews to capture the experiences, perceptions, and suggestions of the participants (Boyce, C., & Neale, P., 2006). The integration of these two data collection methods enabled a holistic and nuanced understanding of the EquivaLearn application and its role in the equivalency education program.

According to Tashakkori, A., & Creswell, J. W. (2007) by adopting a mixed methods approach, the study was able to provide a comprehensive analysis, drawing upon both quantitative data for statistical insights and qualitative data for rich contextual understanding. This approach allowed for a more robust exploration of the various dimensions of the EquivaLearn application and its impact on the educational program, contributing to a more comprehensive and meaningful research outcome.

2.3 Participants

The participants in this study consisted of tutors and students enrolled in the equivalency education program. A total of 71 tutors and 928 students from Sabah and Sarawak were included in the study.

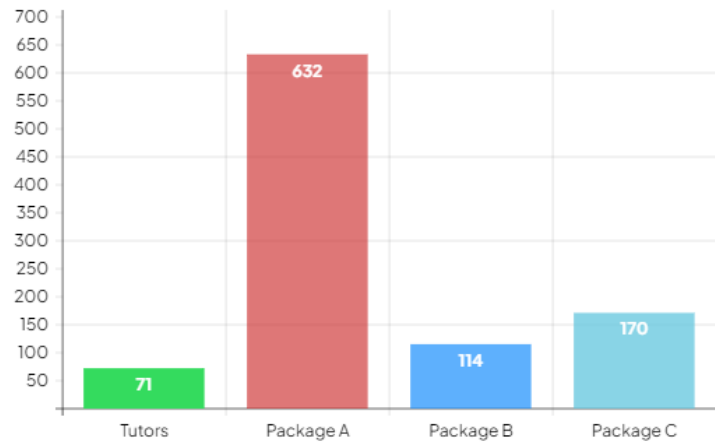


Figure 2. The participants in this study

2.4 Data Collection

The survey in this study aimed to collect data from a diverse range of respondents, totaling 928 individuals. The sample included 71 tutors and students from different packages within the equivalency education program. Specifically, there were 632 Package A students, 114 Package B students, and 170 Package C students.

In addition to the survey, in-depth interviews were conducted with a selected sample of tutors and students to gather qualitative data. These interviews provided an opportunity to delve deeper into their experiences, perceptions, and suggestions regarding the EquivaLearn application. A total of 15 tutors and 30 students participated in the interviews, contributing rich insights and valuable perspectives.

The combination of quantitative data from the survey and qualitative data from the interviews provided a comprehensive understanding of the participants' perspectives and experiences with the EquivaLearn application. The integration of both quantitative and qualitative methods allowed for a more in-depth exploration of the research questions, enriching the overall findings of the study (Hesse-Biber, S. , 2010).

2.5 Quantitative Data

A survey questionnaire was developed and administered to collect quantitative data from the participants. The survey consisted of multiple-choice questions and Likert-scale items, covering various aspects of the EquivaLearn application. The Likert scale is chosen because each instrument that uses this scale has levels ranging from very positive to very negative, which can be expressed in the form of words and assigned scores or values (Riduwan, 2010).

The survey questionnaire covered several key aspects, including: (1) Accessibility, This aspect examined the ease of access to the EquivaLearn application for tutors and students, considering factors such as availability, compatibility with devices, and internet connectivity. (2) Technical assistance, This aspect assessed the level of technical support provided to users of the application, including troubleshooting, guidance, and responsiveness of the support system. (3) User interface, The survey evaluated the usability and design of the EquivaLearn application

interface, focusing on its intuitiveness, visual appeal, and ease of navigation. (4) User experience, This aspect explored the overall user experience with the application, encompassing factors such as satisfaction, engagement, and perceived usefulness in supporting the educational process.

(5) Functionality, The survey examined the various functionalities and features offered by the EquivaLearn application, including its ability to facilitate learning, track progress, and provide interactive learning resources. (6) Advantages, This aspect aimed to identify the perceived benefits and advantages of using the EquivaLearn application compared to traditional educational methods, such as increased flexibility, personalized learning, and access to resources. (7) Efficiency, This aspect focused on the efficiency and effectiveness of the EquivaLearn application in terms of time-saving, streamlined processes, and optimized learning outcomes.

2.6 *Qualitative Data*

Qualitative data in this study was collected through in-depth interviews with a carefully selected sample of tutors and students. The main objective of these interviews was to gain insights into their experiences, perceptions, and suggestions regarding the EquivaLearn application. The interviews were conducted in a one-on-one format, allowing participants to express their thoughts openly. To ensure accuracy and facilitate further analysis, the interviews were audio-recorded. These recordings served as a reference for transcribing the interviews verbatim. Transcription of the interviews was a crucial step in preparing the qualitative data for analysis, as it allowed for a thorough examination of the participants' responses. A total of 15 tutors and 30 students participated in the interviews, providing diverse perspectives and a rich pool of data. The sample size was determined based on the principle of data saturation, meaning that data collection continued until no new information or insights were emerging from the interviews.

The interview questions focused on various aspects of the EquivaLearn application, including: (1) Ease of Access and Convenience, Exploring the participants' experiences in accessing and using the application, and evaluating its convenience in terms of availability and usability. (2) Support and Assistance, Investigating the level of support and assistance provided by the EquivaLearn application, such as technical support or guidance throughout the learning process. (3) User-Friendly Interface, Assessing the participants' perceptions of the application's interface, including its intuitiveness, navigation, and overall user-friendliness. (4) Enhanced Learning Experience, Exploring how the EquivaLearn application contributed to an enhanced learning experience, including aspects such as interactive features, multimedia content, or personalized learning. (5) Motivation and Engagement: Investigating the impact of the EquivaLearn application on the participants' motivation and engagement in the equivalency education program. (6) Collaboration and Communication, Examining the extent to which the EquivaLearn application facilitated collaboration and communication among tutors and students, enabling interactive and collaborative learning experiences.

2.7 *Data Analysis*

In the analysis of survey data, the Likert scale is used as a measurement method. The Likert scale is employed to measure the attitudes, opinions, and perceptions of individuals or groups towards social phenomena. According to Sugiyono (2012), this scale allows for the breakdown of variables to be measured into indicators. These indicators are then used as a basis for constructing instrument items, which can be in the form of questions or statements.

The answer categories in the Likert scale consist of five points, namely: (1) Strongly Disagree, The respondent strongly disagrees with the given statement or question. (2) Disagree,

The respondent disagrees with the given statement or question. (3) Neutral, The respondent neither agrees nor disagrees with the given statement or question. (4) Agree, The respondent agrees with the given statement or question. (4) Strongly Agree, The respondent strongly agrees with the given statement or question (Allen, I. E., & Seaman, C. A. , 2007).

3. FINDINGS

3.1 Quantitative Findings

The EquivaLearn application has shown strong potential and received positive feedback based on a survey conducted with 928 respondents. The survey included 71 tutors, 632 Package A students out of 644, 114 Package B students, and 170 Package C students. The survey covered various aspects of the application, including accessibility, technical assistance, user interface, user experience, functionality, advantages, and efficiency. Here is a summary of the key findings:

Table 1. Summary of Survey Findings

No.	Survei Questions	Strongly Disagree	Disagree	Neutral	Agree	Stongly Agree
1	Accessibility How easy was it to access the EquivaLearn application on your device?	0%	8%	23%	20%	77%
2	Technical Assistance How satisfied were you with the support provided by the technical team?	0%	0%	6%	34%	66%
3	User Interface Were the menus and navigation options intuitive and easy to understand?	0%	0%	0%	37%	63%
4	User Experience Did the application meet your expectations in terms of providing a seamless educational experience?	0%	10%	24%	56%	41%
5	Functionality Did the EquivaLearn application provide all the necessary features and functionalities for your educational needs?	0%	0%	13%	35%	64%
6	Advantages What do you consider to be the biggest advantages or strengths of the EquivaLearn application?	0%	0%	0%	34%	66%
7	Efficiency Did you find that the application helped in improving your efficiency in managing your educational activities?	0%	0%	0%	36%	64%

3.1.1 Accessibility

The survey results indicated that the majority of respondents (77%) strongly agreed that the EquivaLearn application is accessible, while 20% agreed with the statement. Only 8% expressed disagreement, and no respondents strongly disagreed with the accessibility aspect.

3.1.2 Technical Assistance

Regarding technical assistance, 66% of the respondents strongly agreed that the EquivaLearn application offers excellent technical assistance, while 34% agreed that it provides satisfactory technical assistance. No respondents disagreed or strongly disagreed with the statement.

3.1.3 *User Interface*

The majority of respondents (63%) strongly agreed that the user interface of the EquivaLearn application is excellent, while 37% agreed that it is satisfactory. No respondents disagreed or strongly disagreed with the statement.

3.1.4 *User Experience*

Regarding user experience, 56% of the respondents agreed that their experience with the EquivaLearn application was positive, while 41% strongly agreed. A small portion (10%) disagreed to some extent, and 24% had a neutral opinion.

3.1.5 *Functionality*

The survey results indicated that 64% of the respondents strongly agreed that the EquivaLearn application is highly efficient, while 35% agreed that it is satisfactory. No respondents disagreed or strongly disagreed with the statement.

3.1.6 *Advantages*

The majority of respondents (66%) strongly agreed that the EquivaLearn application offers significant advantages, while 34% agreed that it has advantages. No respondents disagreed or strongly disagreed with the statement.

3.1.7 *Efficiency*

All respondents recognized the efficiency of the EquivaLearn application as none strongly disagreed, disagreed, or had a neutral opinion. Specifically, 36% agreed that the application is efficient, while the majority of 64% strongly agreed that it is highly efficient.

3.2 *Qualitative Findings*

The qualitative analysis of the interviews revealed several themes and sub-themes that provided deeper insights into the participants' experiences and perspectives regarding the EquivaLearn application. The key themes that emerged include:

3.2.1 *Ease of Access and Convenience*

Participants highlighted the ease of access to learning materials and resources through the EquivaLearn application. They appreciated the convenience of being able to study anytime and anywhere, which suited their busy schedules.

3.2.2 *Support and Assistance*

Tutors and students expressed satisfaction with the technical assistance provided through the application. They mentioned prompt responses to queries and helpful guidance whenever they encountered difficulties.

3.2.3 *User-Friendly Interface*

The participants commended the user-friendly interface of the EquivaLearn application. They found it intuitive, visually appealing, and easy to navigate, which contributed to a positive user experience.

3.2.4 *Enhanced Learning Experience*

Participants expressed that the EquivaLearn application provided interactive and engaging learning materials, such as videos, quizzes, and interactive exercises. They felt that these features helped them grasp and retain the information more effectively compared to traditional learning methods.

3.2.5 *Motivation and Engagement*

The EquivaLearn application was found to enhance motivation and engagement among both tutors and students. Tutors reported that the application allowed them to track and monitor student progress more effectively, which motivated students to actively participate in their learning. While students expressed that the interactive features and gamification elements in the application made learning more enjoyable and motivating.

3.2.6 *Collaboration and Communication*

The EquivaLearn application facilitated collaboration and communication between tutors and students. Participants mentioned that they could easily communicate through the messaging feature, share resources, and collaborate on assignments or group projects, fostering a sense of community and support.

4. DISCUSSION

4.1 *Quantitative Result*

The quantitative findings from the survey provide valuable insights into the perceptions of tutors and students regarding the EquivaLearn application. The majority of respondents expressed positive opinions across various aspects, including accessibility, technical assistance, user interface, user experience, functionality, advantages, and efficiency.

Regarding accessibility, a significant proportion of respondents strongly agreed that the EquivaLearn application is accessible, indicating that it is user-friendly and easily accessible to users. This is an important factor, as it ensures that tutors and students can effectively utilize the application for their educational needs.

The positive feedback on technical assistance is also noteworthy, as it demonstrates that the EquivaLearn application provides satisfactory support to users. This is essential for addressing any technical difficulties that tutors and students may encounter, ensuring a smooth user experience. The favorable responses related to user interface and user experience indicate that the EquivaLearn application has been designed in a visually appealing and user-friendly manner. This enhances the overall experience for tutors and students, making it easier for them to navigate and utilize the application effectively. The high levels of agreement regarding functionality and advantages highlight the perceived value of the EquivaLearn application. The features and capabilities of the application are considered beneficial for enhancing the equivalency education program. The positive perceptions regarding efficiency further emphasize that the EquivaLearn application is an effective tool for supporting the program's objectives.

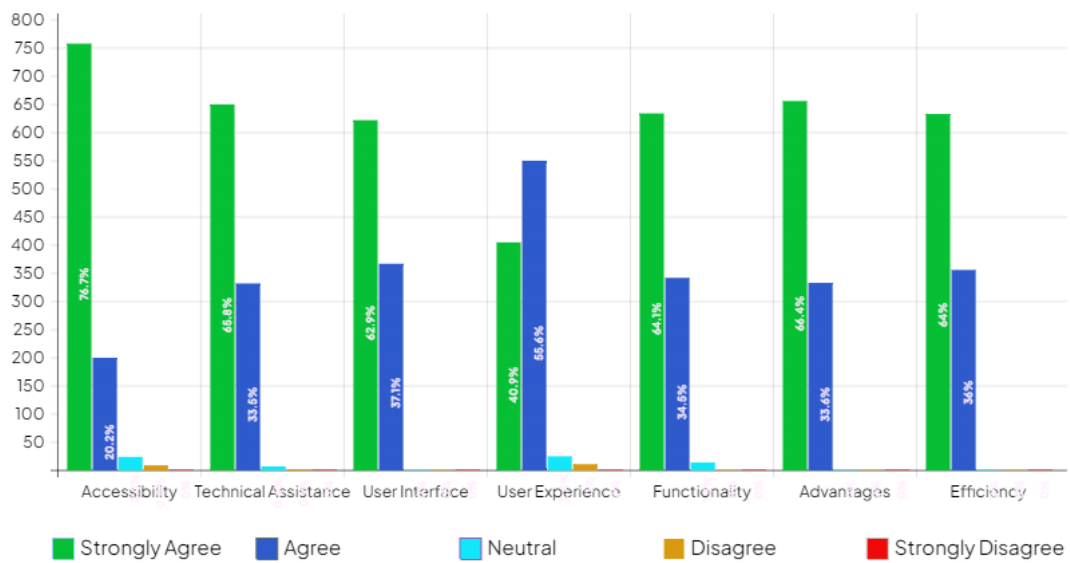


Figure 3. Figure 1: Feedback of the Survey

4.2 Qualitative Results

The findings from the qualitative analysis provide valuable insights into the impact and effectiveness of the EquivaLearn application in the equivalency education program. The themes that emerged demonstrate the positive influence of the application on various aspects of the educational experience for both tutors and students. The ease of access and convenience offered by EquivaLearn addresses the challenges of limited access to learning resources and the need for flexibility in learning. By providing a centralized platform for learning materials and enabling anytime, anywhere access, the application enhances the learning experience and accommodates the busy schedules of tutors and students. The support and assistance provided through the EquivaLearn application are instrumental in ensuring a smooth user experience.

The prompt responses to queries and helpful guidance contribute to user satisfaction and minimize obstacles faced by tutors and students. The user-friendly interface of EquivaLearn plays a crucial role in promoting user engagement and satisfaction. The intuitive design and ease of navigation contribute to a positive user experience, making the application accessible and enjoyable for both tutors and students. The interactive and engaging learning experience offered by EquivaLearn motivates learners and enhances their comprehension and retention of knowledge.

The availability of multimedia resources, interactive exercises, and quizzes adds a dynamic and stimulating dimension to the learning process. The flexibility and customization options provided by EquivaLearn empower tutors and students to personalize their learning experience.

This adaptability allows them to focus on specific topics, study at their own pace, and tailor the learning journey according to individual preferences and needs. EquivaLearn fosters collaboration and communication among tutors and students, creating a supportive and interactive learning environment. The messaging feature and resource sharing capabilities facilitate effective communication and enable collaboration on assignments and projects, promoting a sense of community and active engagement. Overall, the findings suggest that EquivaLearn has a positive impact on the equivalency education program by addressing key challenges and enhancing the educational experience for tutors and students. The application provides a comprehensive solution

that supports learning, collaboration, and communication, ultimately contributing to improved educational outcomes.

5. CONCLUSION

The quantitative results showed that the EquivaLearn application was highly accessible, with the majority of respondents finding it easy to access on their devices. The technical assistance provided by EquivaLearn was highly regarded, with respondents expressing satisfaction with the support received. The user interface was considered intuitive and easy to navigate, contributing to a positive user experience. The application was perceived to be highly functional and advantageous, offering necessary features and benefits for educational purposes. Additionally, respondents recognized the efficiency of the EquivaLearn application, finding it helpful in managing their educational activities.

The qualitative findings further supported the positive impact of EquivaLearn. Participants highlighted the ease of access and convenience provided by the application, which accommodated their busy schedules and allowed them to study anytime and anywhere. The support and assistance received through EquivaLearn were highly valued, with prompt responses and helpful guidance being mentioned. The user-friendly interface of the application contributed to a positive learning experience, making it visually appealing and easy to navigate. The interactive and engaging learning materials offered by EquivaLearn were found to enhance comprehension and retention of knowledge, motivating learners and increasing their engagement. Collaboration and communication were also facilitated, creating a sense of community and support among tutors and students.

The EquivaLearn application has revolutionized equivalency education by effectively addressing key challenges and significantly improving tutor performance and student engagement. Its positive impact is evident in the quantitative and qualitative findings, highlighting its accessibility, technical assistance, user interface, user experience, functionality, advantages, and efficiency. EquivaLearn provides a comprehensive solution that supports personalized learning, collaboration, and communication, ultimately leading to enhanced educational outcomes in the field of equivalency education.

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