

# PERSONALISED DATA PLATFORM CAN PROVIDE SUPPORT FOR CAREGIVERS OF PEOPLE WITH SPECIAL EDUCATIONAL NEEDS

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## ABSTRACT

Many technologies has been used in the special education field, but there is still a lack of a product to show learner learning data. There may also be communication problems between special schools and learners' families. This study aims to design a Cosmo data platform for all stakeholders. We analysed the strengths and weaknesses of similar products, conducted in-depth interviews with 5 parents and teachers from special schools, and user-tested some of the features of the Cosmo data platform, analysed their pain points and needs. The study also shoes that the users are concerned about the progress and growth of the learners, and they also expected the platform to improve communication between schools and families.

## INTRODUCTION & BACKGROUND

As technology develops and the special education population grows, traditional models of special education may be challenged. At the same time, the relationship between technology and learning will be explored in depth. Due to the specific symptoms of people with cognitive impairment, monitoring, control and effort by caregivers are essential in the treatment and care of people with cognitive impairment. It will be helpful to provide professional data support for learners to their schools, teachers, parents and therapists.

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## METHODOLOGY

The overall aim of the study was to explore the needs and concerns of cosmo units users regarding the Cosmo data platform and their feedback on the high fidelity prototype. The following two methods were used: 1. user interviews were used to gain insights from the target population, resulting in an empathy map, persona and user journey map, and a kano model was used to plan the main features; usability testing was used to test the original hypothesis and the prototype was designed based on previous competitor research.

The subjects of this study were five teachers and parents from special education schools. These respondents had one or more children with autism and intellectual disabilities (ID) and all had experience with Cosmo units, using Cosmo products at home or at school to intervene in the children's learning and training. With the consent of the interviewees, we were able to obtain records and test results from all five parents.

To give special school teachers a more practical feel and insight into the cosmo data platform, we also prepared high-fidelity prototypes and gave them a first click test during the interviews and interviewed the users about their feelings on using the prototypes.

## RESEARCH RESULTS

Three of the five users are both teachers and parents of children with autism or intellectual disabilities. Both teachers and parents wanted to see detailed data about their learners, including their progress, strengths and weaknesses. They all agreed that user identification was necessary. Some indicated that there was mutual mistrust between teachers and parents, and that students' performance at home and at school differed, leading to unequal information and communication barriers between them. Another part of the teachers felt that classroom management was difficult due to the different backgrounds of the students and they were sceptical about Cosmo data platform. In contrast, the parents' attitude was much more positive.

In the first click test, users had the lowest direct success rate in the "select sessions" task, with an average of 48.75 false clicks, two testers' tasks lasting more than 250 seconds, and around 10 pages of false clicks. This was the most confusing task for the users compared to the other tasks. This suggests that the interface design in this task is not directional enough and some elements tend to mislead users.

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## CONCLUSIONS & FUTURE WORK

The data platform helps parents and teachers to gain a comprehensive data of learners' performing in therapy activities. Learners have different situation, the presentation of data must be personalised to meet the needs of their caregivers. To help parents and teachers better monitor learners' learning situation, a multi-user data platform was designed to run on iPads, where users with different permissions can access different data and user identity verification can provides data security for users. The system also provides a communication platform between parents and the school, which means that data on students' activities both at home and at school can be shared, thereby promoting stakeholder engagement and assessing learner performance.

We have concluded that the Cosmo data platform is an excellent tool to support special educational needs. It can provide professional data to help caregivers manage their learners, reduce barriers and mistrust to communication between teachers and parents. At the same time, professional data can demonstrate the progress of learners to convince some sceptics, and attract more people to use it.