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Erasmus Plus

Mobile Intercultural Cooperative Learning (MICOOL)

IPads for special education – need analysis (OUTPUT 5)

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The universal nature of mobile technology makes them an important tool to support people with special educational needs. Intuitive handling, small size and easy to carry from place to place are features that make tablets and smartphones a very important tool to support those in the process of communicating with the world, learning, working, playing. Mobile technologies are particularly important in the process of social integration, offering people with disabilities unique possibilities by such accessibility features like VoiceOver, zoom (text enlargement to any size), assistive touch, video descriptions, an intelligent personal assistant (Siri), hearing aids and sound processors, invert colors, and many more features to facilitate the organization of daily life.

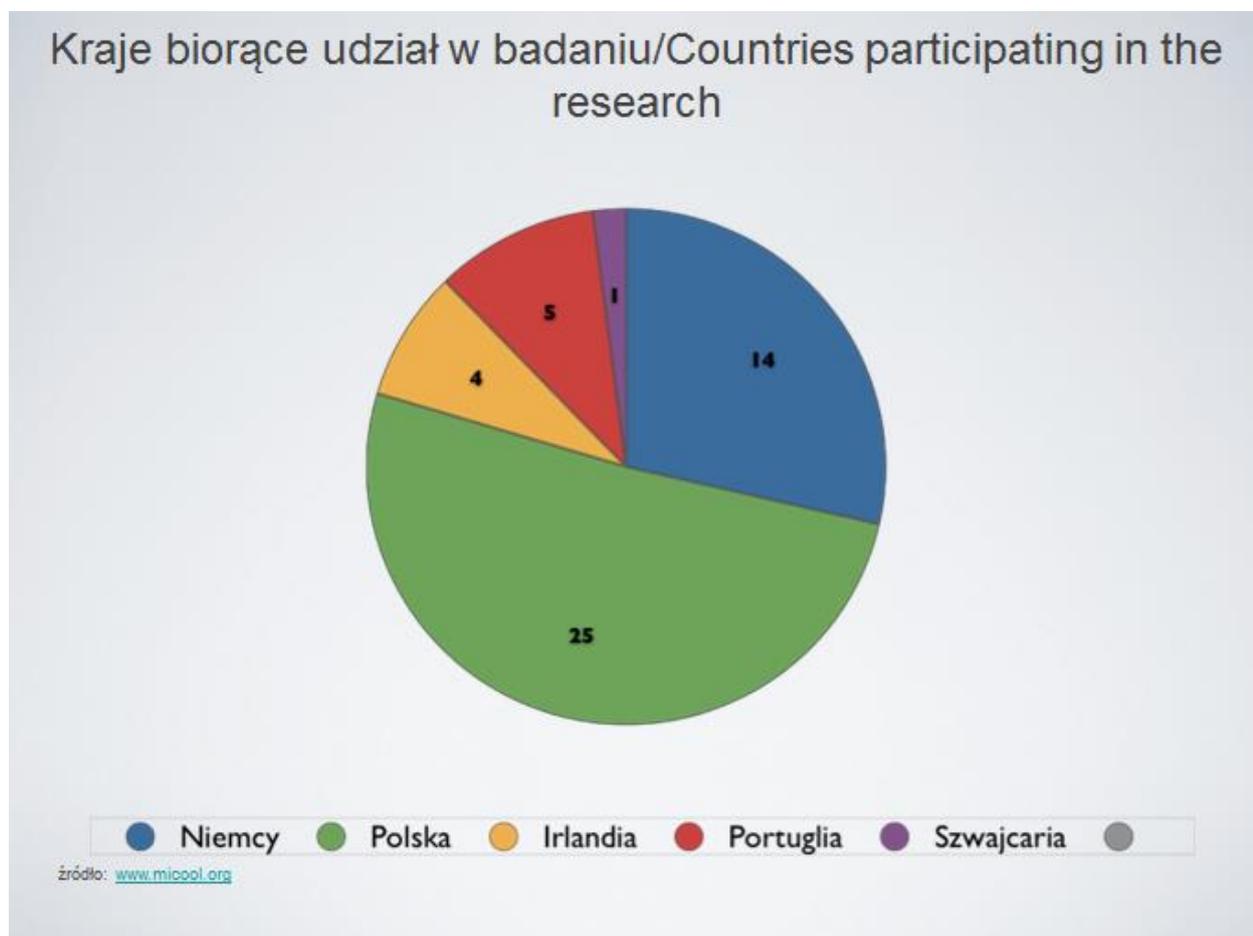
Breaking down environmental barriers, making it difficult or impossible for people with disabilities to participate in society, has become one of the priority activities related to their rehabilitation. A very important step in this direction was the creation of a new ICF classification by WHO at the beginning of the 21st century (International Classification of Functioning, Disability and Health). This classification complements the medical approach to disability that represented the WHO definition of 1980, with a social aspect. It uses the term "disability" to emphasize "the multidimensional phenomenon resulting from interactions between people and their physical and social surroundings. Disability is not perceived as a phenomenon of categorizing people, but as a universal human experience, which makes it possible to see that people with disabilities are not a minority group. **Disability is understood here not only as a result of injury, but rather as a result of the barrier that a person encounters in the environment.** New technologies support the removal of these barriers, which in turn makes their role in therapy and support for people with disabilities continue to grow.

Paradoxically, mobile technologies, despite their tremendous potential, are used in relatively small numbers in schools to work with students with different types of special educational needs. There is also no comprehensive model for incorporating these

technologies into inclusive and special education, which makes interested teachers, often passionate, look for solutions - not just methodically but often financially - on their own.

Within the framework of the MICOOL Project (International Intercultural Cooperative Learning), a team of researchers from Poland, Germany, Ireland and Portugal conducted research among teachers working with special education needs (with different types of disabilities) who use tablets. Forty- eight respondents from the above 4 countries were able to obtain the survey.

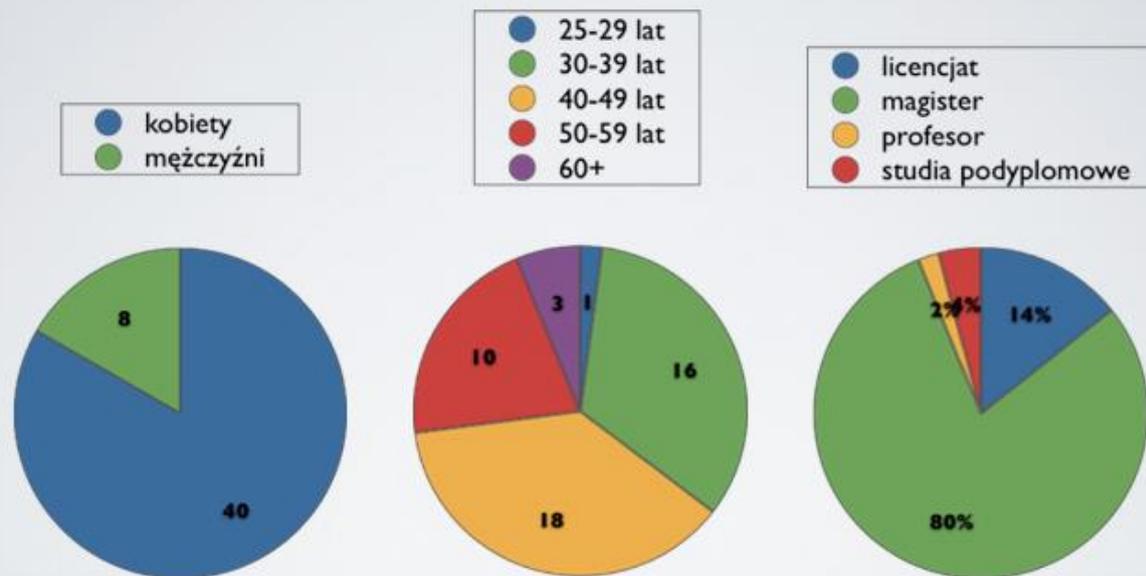
The largest group which participated in the survey comprised the respondents from Poland (25 persons) and from Germany (14 persons). A number of teachers also completed surveys in Ireland and Portugal.



source: own research

Chart 1. Countries participating in the study: Germany, Poland, Ireland, Portugal, Switzerland

Respondenci/respondents



źródło: www.micool.org

source: own research

Chart 2. Characteristics of respondents

Men/women

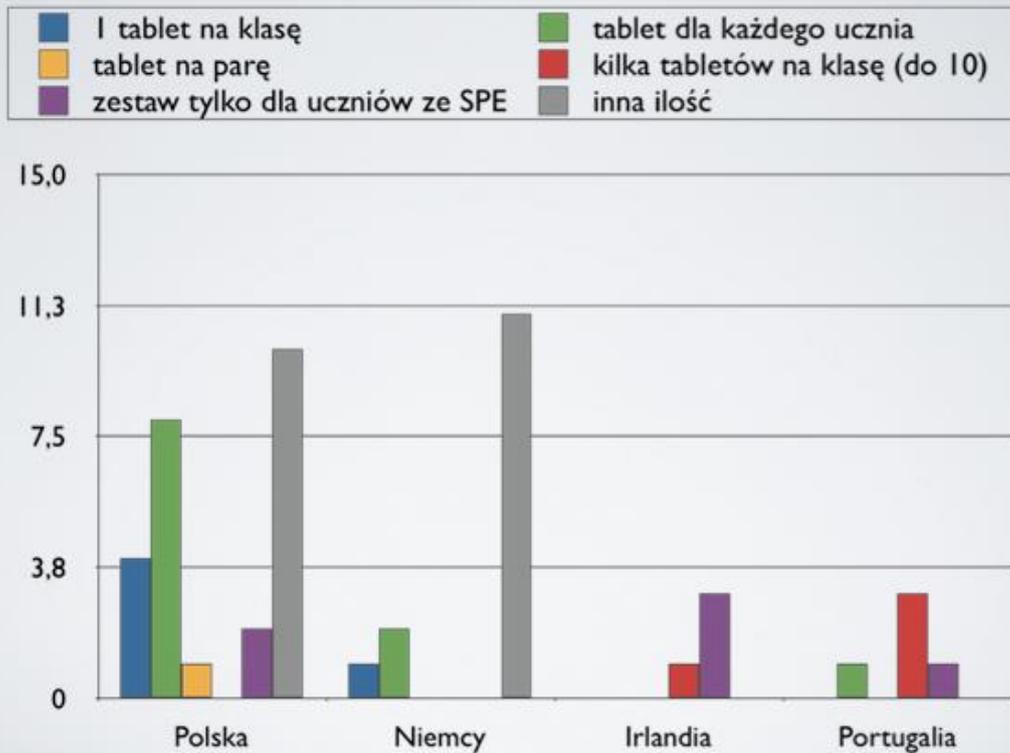
Age

Education

The majority of respondents were women (40/48), all respondents completed higher education (master's degree); 80% of the respondents had a master's degree. Most respondents were aged 30-49. Forty out of 48 respondents declared that they work in public institutions.

The opinion of the respondents confirmed the lack of a uniform system of introducing mobile technologies into schools. In answer to the question about the number of tablets that teachers have at their disposal, a large variety of answers have been obtained. Not only every country, but every school, by a process of trial and error, or due to certain financial possibilities (or lack of them), chooses a different model of tablet sharing. It happens that teachers themselves, at their own cost or with a great financial effort, try to get equipment for students. Symptomatic was the statement of one of the teachers from Poland, who wrote in the comment: "I desperately need help with the purchase of tablets for my students. For the moment, I bought myself three tablets for them".

Liczba tabletów w placówce/ the number of tablets in the institution



source: own research

Chart 3. The number of tablets in the institution: Poland, Germany, Ireland, Portugal

- One tablet per class (blue)
- One tablet for each pair of students (yellow)
- Set of tablets for use by students with special needs (purple)
- One tablet per student (green)
- Set of tablets per class (red)
- Other (grey)

Among the applications most commonly used by students, respondents indicated, among others, applications supporting physical, emotional and social development, related to digital literacy, performance sharing (communicators), and group work. So there is a huge variety of uses for mobile technology in working with students with special educational needs.

Aplikacje wspierające – Polska/apps which support: (Poland)

	rozwój fizyczny /physical development	rozwój emocjonalny i społeczny /social and emotional development	rozwój uczniów z dyskalkulią /development of students with dyscalculia	umiejętności komunikacyjne /communication skills	alfabetyzację cyfrową /digital literacy	pracę w grupie /group work	Gamifikacyjne /gamification	dzielenie się osiągnięciami /sharing the performance and achievements
Nigdy/never	11	10	11	4	5	6	8	9
1-5 godz. Tygodniowo/ 1-5 h a week	12	11	12	11	14	12	12	13
6-10 tygodniowo/ 6-10 h a week	1	3	0	8	3	3	2	0
11-20 tygodniowo/ 11-20 h a week	1	0	0	1	1	2	1	1
21 i więcej tygodniowo/ 21 and more h a week	0	0	1	0	0	0	0	0

SO

source: own research

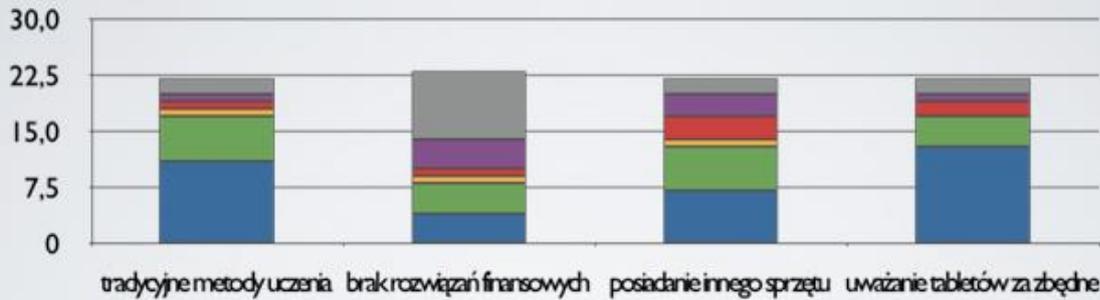
Chart 4. Supporting applications with accessibility features - frequency of use (in Poland)

Respondents were also asked how difficult it was to put tablets into their schools. In all countries, the lack of financial solutions facilitating the purchase of mobile devices has been identified as a major problem. The lack of time for training and the lack of self-training for teachers as well as parents' reluctance due to their fear of transferring the financial burden on their purchase and maintenance of equipment are also significant. In the case of respondents from Germany, rather reluctant to use tablets, the fear of lack of appropriate digital competence was also important. It seems that this is not a question of cultural difference, but a significant correlation with respondents' age: most of the respondents in Germany were in the 50-59 age group and even 60+.

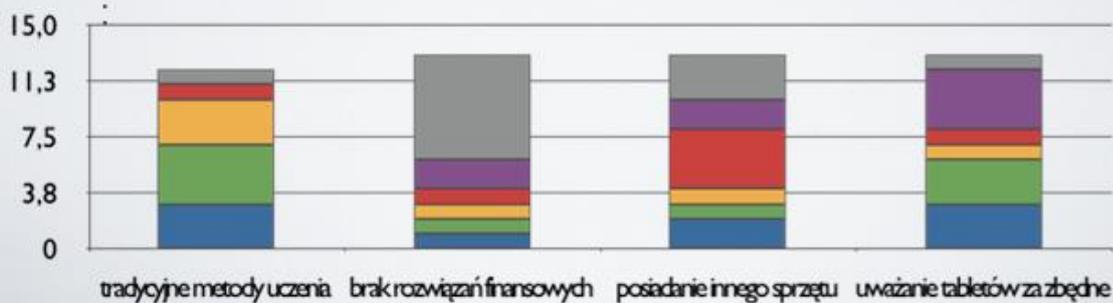
przyczyny trudności we wprowadzaniu tabletów/Causes of difficulty in introducing tablets on the example of Poland and Germany



Polska:



Niemcy



source: own research

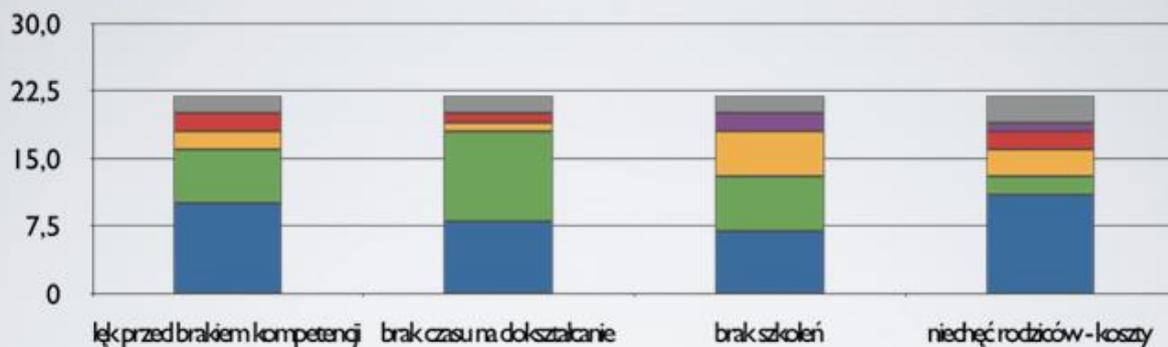
Charts 5. Causes of difficulty in introducing tablets on the example of Poland and Germany: traditional teaching methods, lack of financial solutions, existing different equipment, tablets considered unnecessary

1: least important

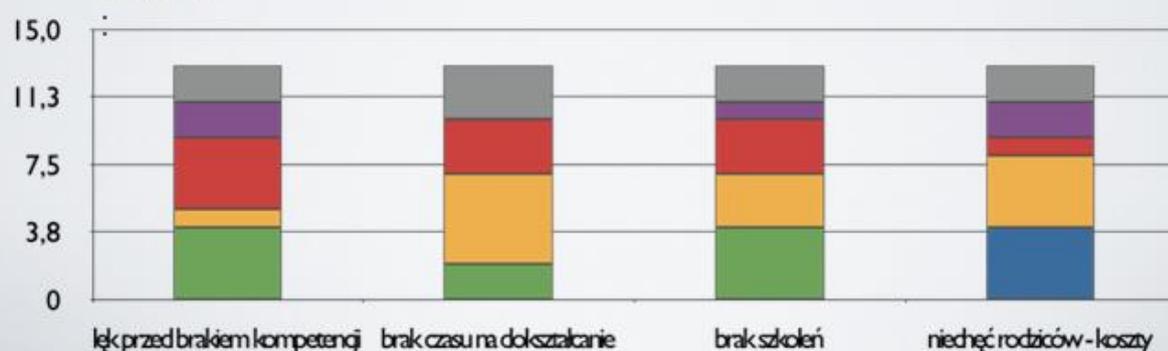
6: most important

Przyczyny trudności we wprowadzaniu tabletów/Causes of difficulty in introducing tablets on the example of Poland and Germany

Polska:



Niemcy



source: own research

Charts 6. Causes of difficulty in introducing tablets based on the example of Poland and Germany: fear of lack of competence, lack of time for training, no trainings, unwilling attitude of parents to finance the purchase of tablets

1: least important

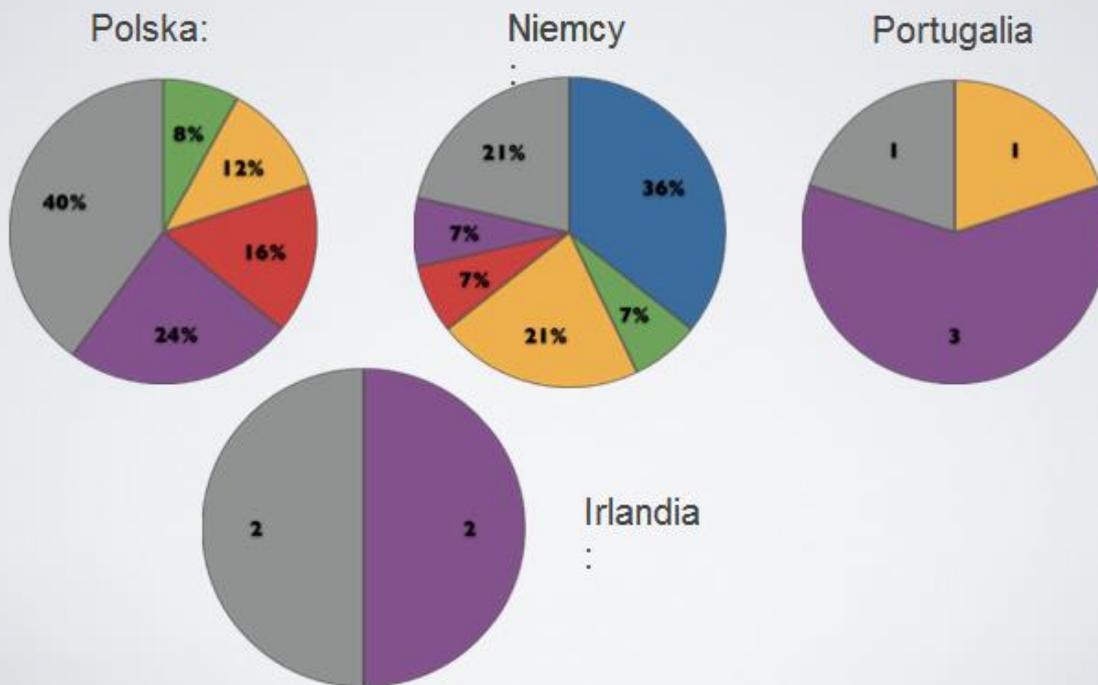
6: most important

The difficulties teachers face are offset by the use of hard-earned mobile devices in working with students.

Respondents were asked about the benefits of using tablets to work with students with special educational needs.

With the recognition that mobile technologies enhance interaction between students and between them and the teacher, the vast majority of respondents agreed. Only the respondents from Germany, who were the only ones who pointed out the answer "definitely not", were more distant, in large numbers. It should be noted that they earlier also declared that they do not use tablets.

technologie mobilne wzmacniają interakcje/Mobile technology strengthens interactions

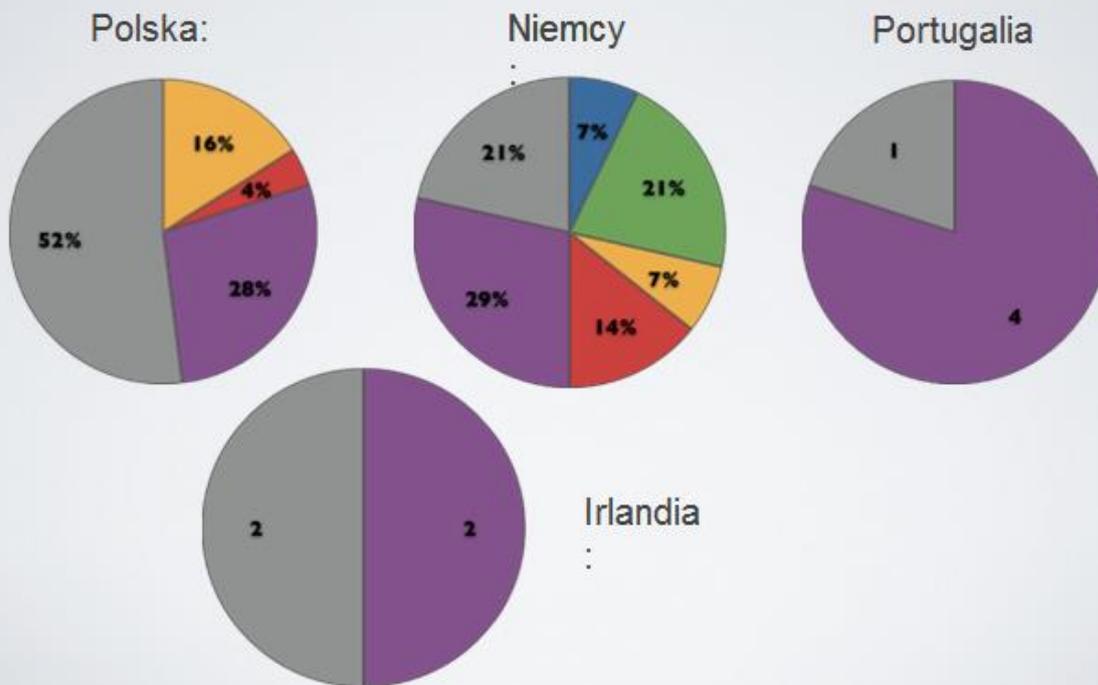


source: own research

Chart 7. Mobile technology strengthens interactions: Poland, Germany, Portugal, Ireland
 1: least important
 6: most important

Eighty per cent of the respondents in Poland agreed with the thesis that mobile technologies increase student autonomy and their independence. Similarly, the vast majority of respondents from Portugal and Ireland agreed with the statement and half of the rather skeptical German teachers. This is one of the questions that have the least controversy among the respondents. Tablets that make it easier for students with disabilities to function in the social environment, communicate and use teaching resources, and improve their physical (eg manual, coordinating) activities, are significantly increasing the independence of their students.

Dzięki technologiom mobilnym wzrasta samodzielność/Mobile learning can increase the independence of students

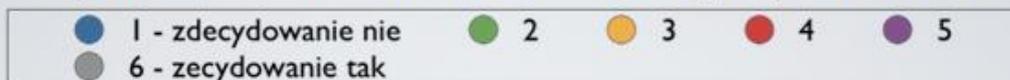


source: own research

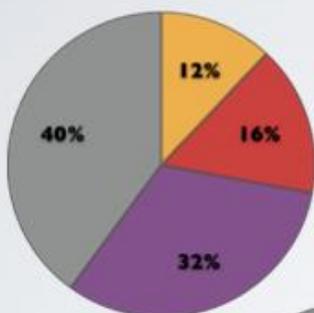
Chart 8. Mobile learning can increase the independence of students: Poland, Germany, Portugal, Ireland
 1: least important
 6: most important

Quite similar, albeit less unequivocal, was the distribution of responses to the question: can mobile learning reduce the impact of students' disabilities on their ability to perform task. This time also among the Polish respondents appeared those who considered the role of tablets here neutral.

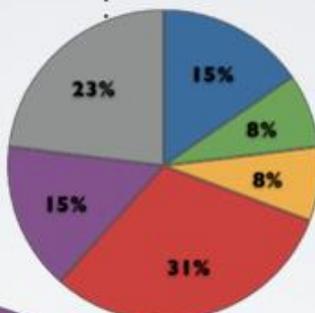
TM redukują wpływ dysfunkcji ucznia na naukę/Mobile learning can reduce the impact of students' disabilities on their ability to perform tasks



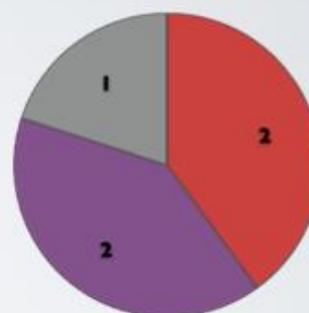
Polska:



Niemcy



Portugalia



Irlandia



source: own research

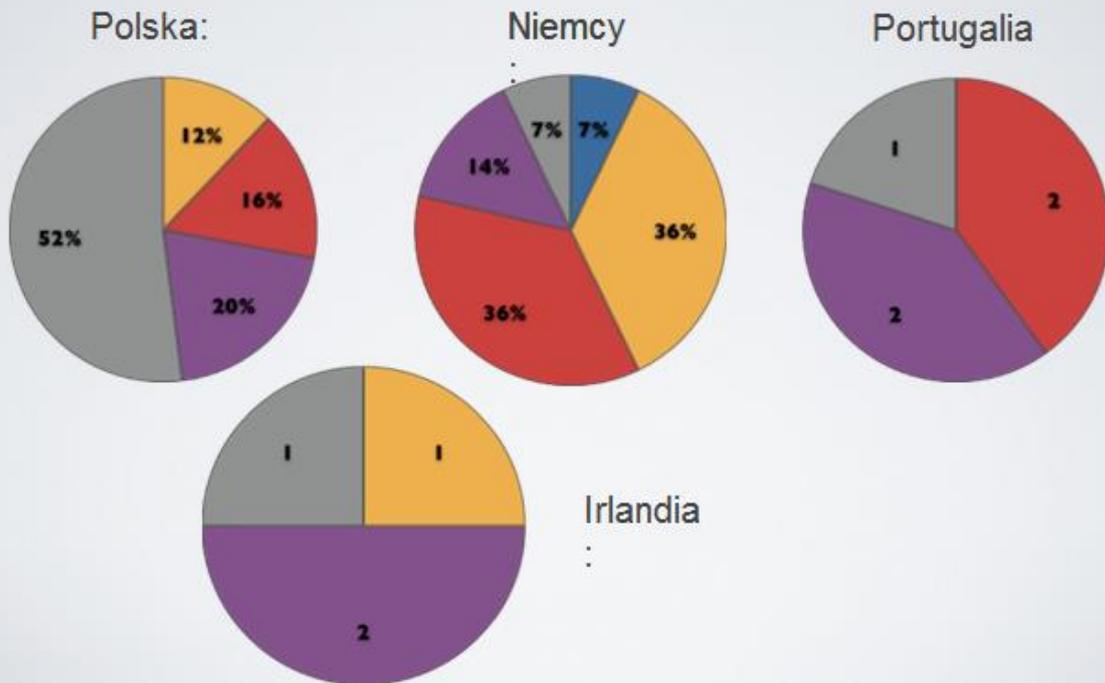
Chart 9. Mobile learning can reduce the impact of students' disabilities on their ability to perform tasks: Poland, Germany, Portugal, Ireland

1: least important

6: most important

Most teachers from Ireland, Poland and Portugal and about twenty five per cent of German respondents are also convinced that, thanks to mobile technology, students have become more interested in topics covered in lessons. One German teacher estimated that this was not the case.

Dzięki TM wzrasta zainteresowanie uczniów/Mobile learning can improve levels of engagement of students in class



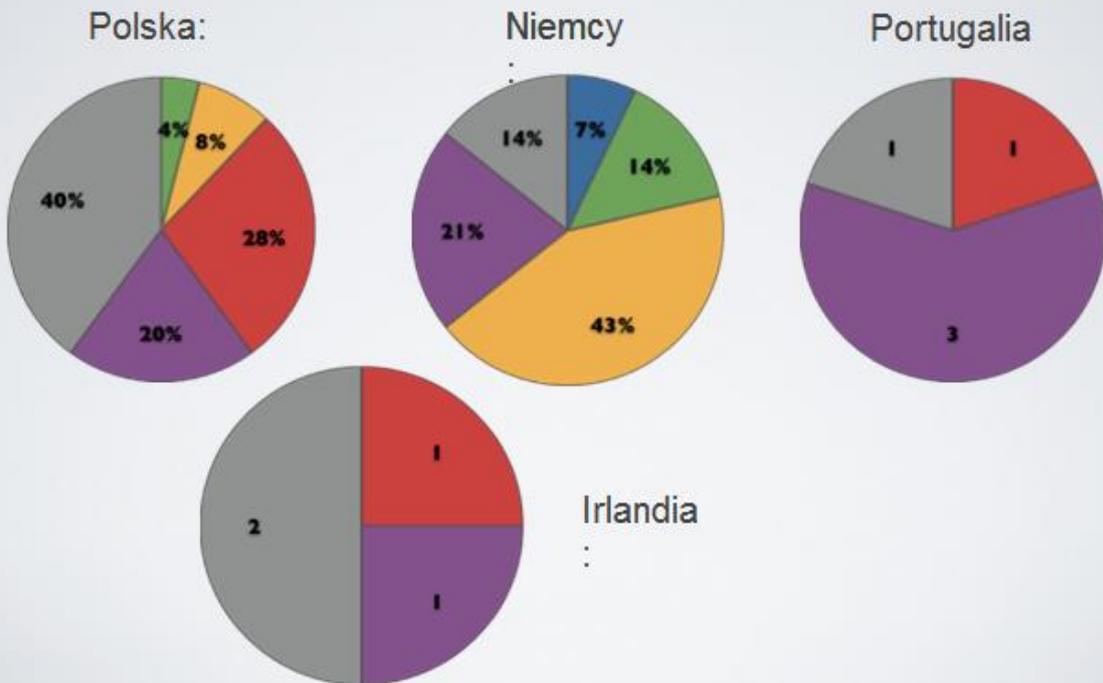
source: own research

Chart 10. Mobile learning can improve levels of engagement of students in class: Poland, Germany, Portugal, Ireland

1: least important
6: most important

The respondents' opinions on the possibility of improving the concentration of the learner on the task by using the mobile device lessons were slightly more divided. More than half of respondents from Poland, Ireland and Portugal (although their opinions were much more moderate - fewer respondents than for previous questions chose "to the highest degree") and about 35% of teachers from Germany. Most of them have declared that the level of student concentration does not rise or increase. Similar responses have also emerged among individual respondents from Poland.

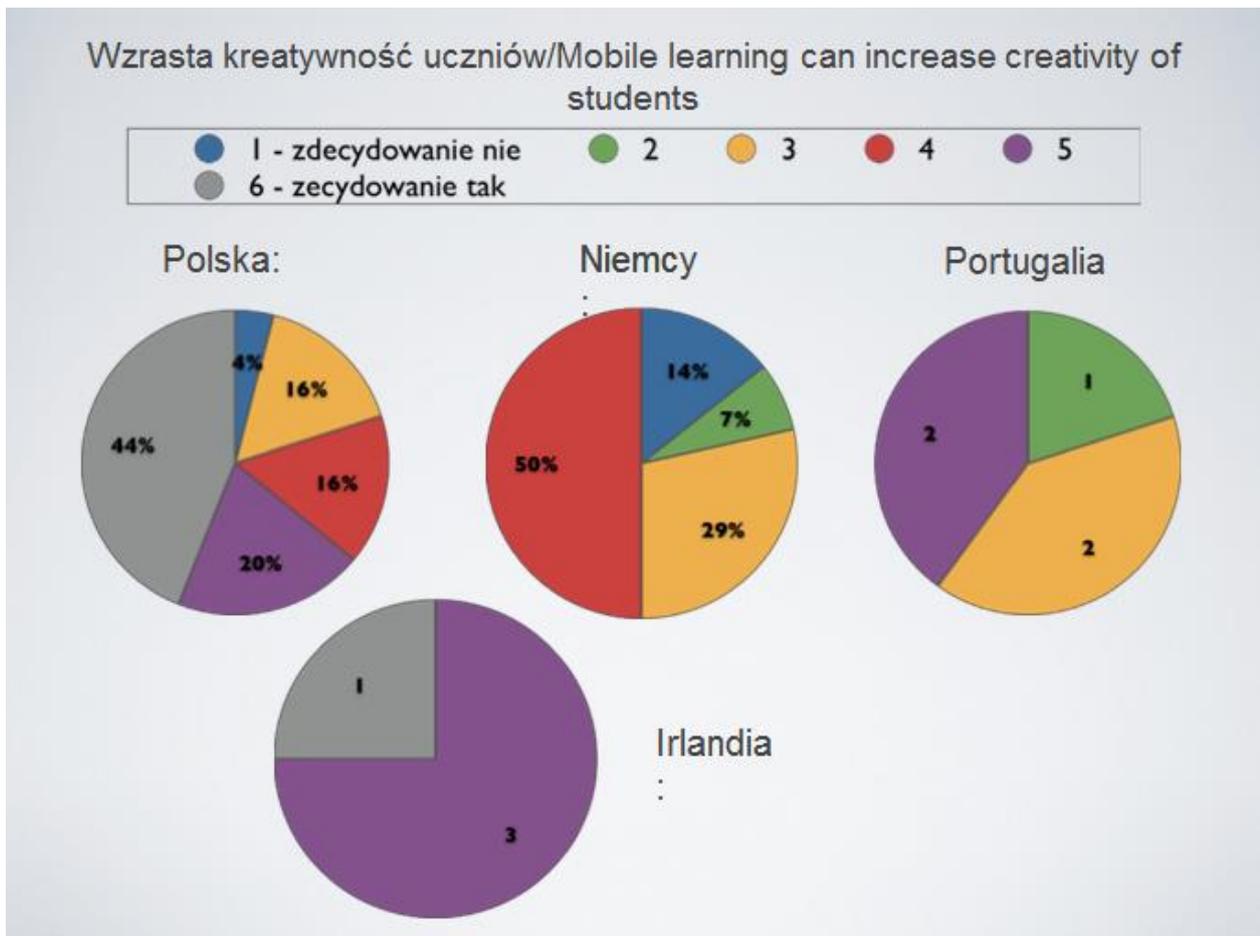
TM poprawiają koncentrację ucznia na zadaniu/Mobile learning can help improve the attention span of students in problem solving



source: own research

Chart 11. Mobile learning can help improve the attention span of students in problem solving: Poland, Germany, Portugal, Ireland
 1: least important
 6: most important

Similarly, the possibility of increasing the creativity of pupils in the use of mobile devices has been assessed. It was positively and very positively assessed by more than half of Polish teachers and all Irish respondents, more skepticism was retained by respondents from Portugal and Germany.



source: own research

Chart 12. Mobile learning can increase creativity of students: Poland, Germany, Portugal, Ireland

1: least important
6: most important

The sketchy results of the research presented above show the situation of teachers using mobile technologies in special education in selected countries. From the answers given by them, there is a picture of educators looking for their own, without any systemic support, solutions to strengthen the educational opportunities of their students. They are aware of the extraordinary potential of new technologies, but are judged in a realistic way (and in the case of older generation teachers with more inhibitions). They know what a tablet can do for them in class, but they also know that miracles can not be expected. It's just technology, and the power of the work depends primarily on the student and the teacher. There is no doubt that there should be systemic solutions to facilitate the introduction of mobile devices for special and inclusive education. These must be solutions for both institutional and facility-specific equipment, including universal solutions (the number of school-based tablets - depending on the type of school and the disability of students), and the support of teachers through the organization of training, workshops and network co-operation.

The full report will be available in the December issue of the International Journal of Pedagogy, Innovation and New Technologies.