



ICT Competence Network for Innovative Services for Persons with Complex Communication Needs

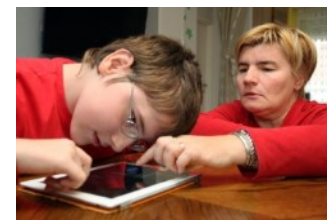
Assoc. Prof. Željka Car, Ph.D.
University of Zagreb
Faculty of Electrical Engineering and
Computing
Croatia

The Role of ICT in the Development of Inclusive Society
for Persons with Disabilities
Beograd, 8-9 October, 2015

Complex communication needs



- Significant speech, language, motor and/or cognitive impairments which restrict persons ability to participate independently in society
- Not able to communicate temporarily or permanently by using speech (basic means of communication between people)
- Have difficulties in production and / or understanding of oral and / or written language
- Different ages, abilities, social status, nationality ...
- Common causes
 - sever intellectual disability, cerebral palsy, autism, childhood apraxia of speech, traumatic brain injury, stroke and degenerative diseases



Augmentative and alternative communication



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- Communication methods used to supplement or replace speech or writing for those with impairments in the production or comprehension of spoken or written language
- AAC can be a permanent addition to a person's communication or a temporary aid
- use of graphic and textual **symbols** (rather than written words alone) to represent certain objects, actions or concepts

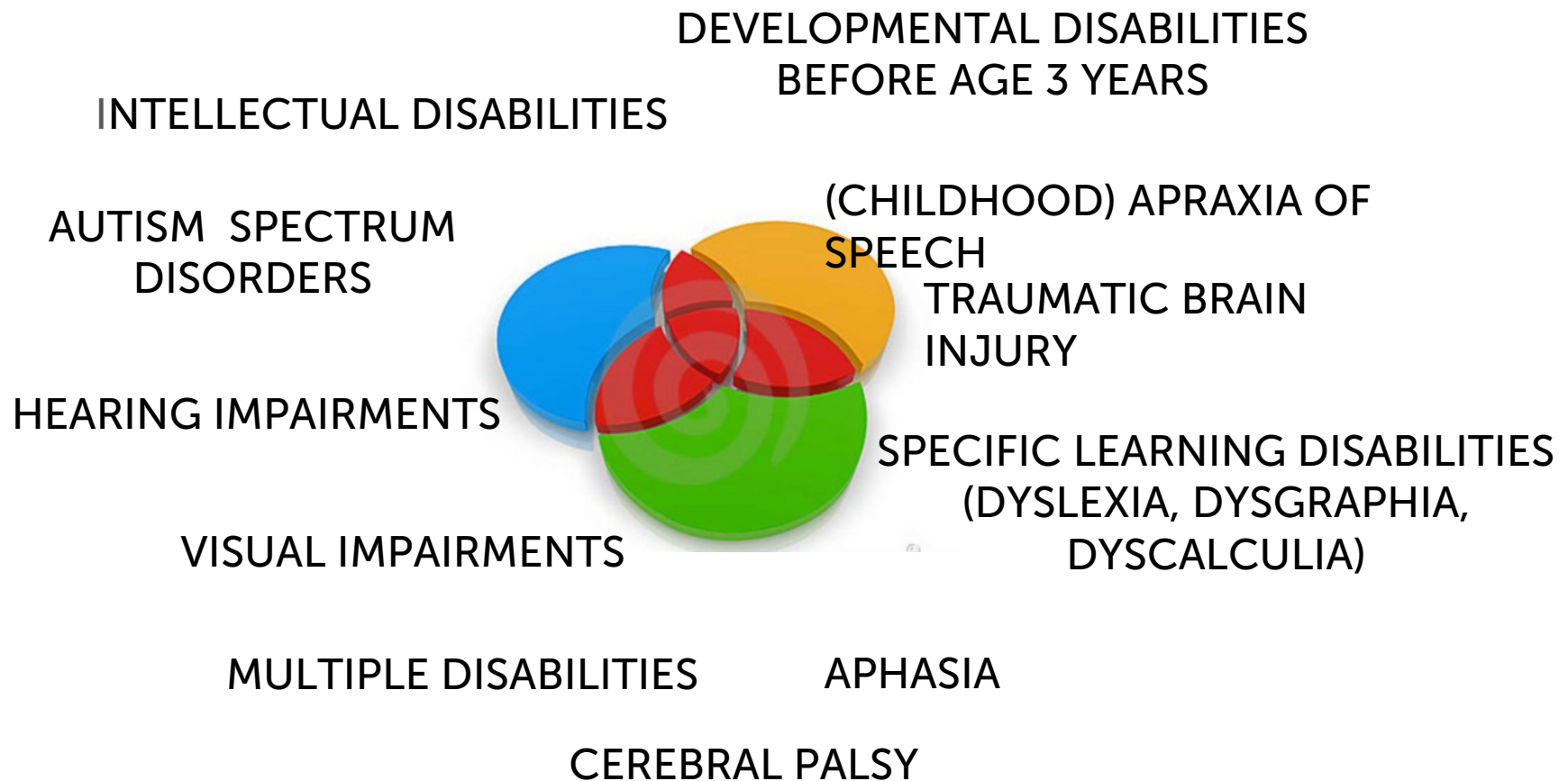


Symbols help to communicate ideas and information.

AAC Users



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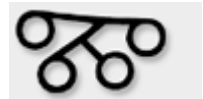


Action background

- The research activities and consortium building have started in 2009
- University of Zagreb Development Fund (01/12-02/13)
- **EU-IPA III C "ICT Competence Network for Innovative Services for Persons with Complex Communication Needs" (ICT-AAC) (03/2013 - 03/2015),**
- **Croatian Science Foundation (2014 -)**

Research consortium

- 4 members of University of Zagreb
 - Faculty of Electrical Engineering and Computing (FER) (project beneficiary)
 - Faculty of Education and Rehabilitation (ERF)
 - Faculty of Graphic Arts (GF)
 - Faculty of Humanities and Social Sciences (FF)



Stakeholders

- Parental association OKO



Udruga roditelja OKO

- Croatia Down Syndrome Association



- Croatian Association on Early Childhood Intervention



- Polyclinic SUVAG Osijek



- Inclusion Support Center IDEM



- Croatian SMEs – HSM Informatika

Project outcomes


- About 20 Android/iOS/web AAC services for education and communication
- Digital repository of AAC educational and communication materials




Mreža podrške dio je ICT-AAC projekta napravljen za Vas

Saznajte više o projektu na [službenoj web stranici](#)


Repozitorij PK materijala



Korisnički forum





Komunikacija sa stručnjacima





Područni razvojne postavke » Pregled aktivnih tema


naslov	STATUS	PRISUSTVO	OPREMLJENOST
Komunikacija, jezik i govor: kakak ti jeje	0	0	Nema postavke
Kako potpomognute komunikacije utječe na razvoj govora?	0	0	Nema postavke
ICT-AAC aplikacije: iskustva i sugestije	0	0	Nema postavke
Koji tablet nabaviti?	0	0	Nema postavke
Kako znati da su aplikacije dobar izbor za osobe sa složenim komunikacijskim potrebama?	0	0	Nema postavke
Poticanje rarnog komunikacijskog razvoja u svakodnevnim situacijama	0	0	Nema postavke
Rane intervencije u Zagrebu	0	0	Nema postavke
Rane intervencije izvan Zagreba	0	0	Nema postavke
Čitajmo zajedno od najranije doba	0	0	Nema postavke











ICT-AAC Applications

- Personalization and adaptation of:
 - content – symbols, user photos, sound recordings, labels...
 - graphical user interface
- Croatian language
- Used widely in the region
- Preschools, schools, rehabilitation centers



- Apple iOS & Android applications (via Google Play Store and Appstore)

- Komunikator
- Matematički vrtuljak
- Slovarica
- e-Galerija
- Matematička igraonica
- Glaskalica
- Pamtilica
- *Prepoznaj pojmove (samo Android)*
- Domino brojalica
- e-Galerija Senior
- Koliko je sati?
- Komunikator +



All applications are FREE!

<http://www.ict-aac.hr/index.php/aplikacije>

- Web-applications

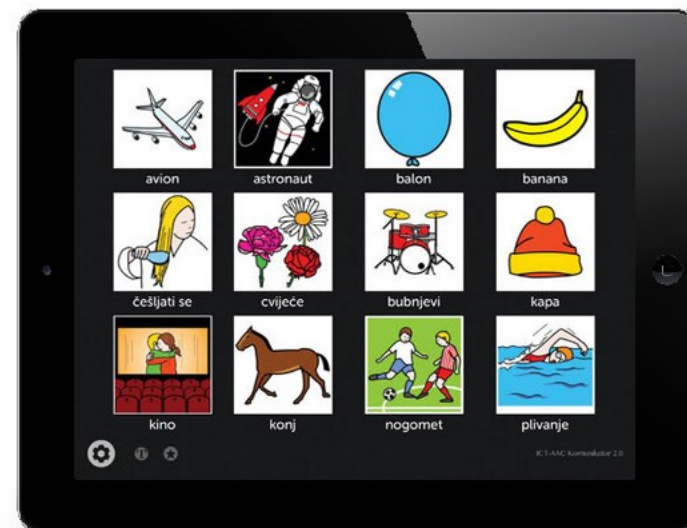
- Matematički vrtuljak
- Matematička igraonica
- Glaskalica
- Koliko je sati?



ICT-AAC Application: *Communicator*



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The application contains a basic set of symbols, while each user can create their symbols using photos or images. Pressing a symbol plays an associated soundtrack. Users can adjust application interface to show more or less symbols on the screen.



1400 downloads
(~4 per day)



950 downloads
(~1,5 per day)

ICT-AAC Application: *Letters*



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Helps children to learn visual symbols and new phonological forms. Such paired visual and auditory symbols in this group of children encourage, maintain and improve early literacy skills necessary for reading and writing.



**5650 downloads
(~10 per day)**



**900 downloads
(~1,5 per day)**

ICT-AAC Application : *Mathematical Carousel*



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Helps preschool and school-aged children with
basic mathematical operations.

Current version of the application involves
three activities: counting, equality of sets and
basic math operations using numbers or
symbols.



1300 downloads
(~3 per day)

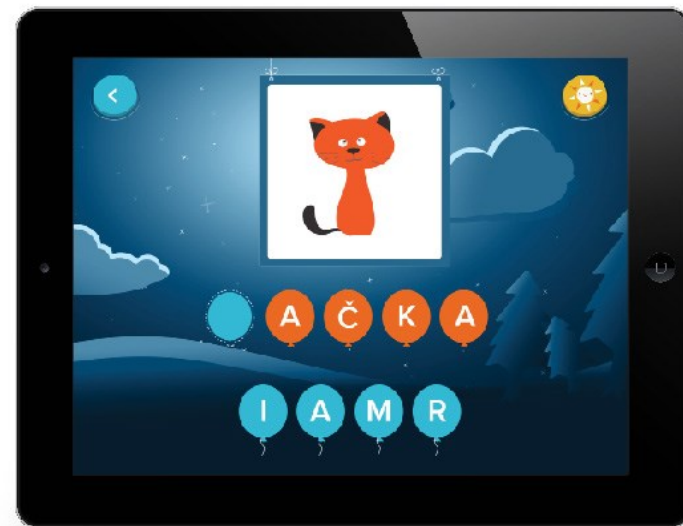


350 downloads
(~1 per day)

ICT-AAC Application: *Vocals*



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Helps mastering **phonological awareness**, which is one of the main prerequisites for reading. It consists of recognition of first, last or all letters in a given word. Tasks' difficulty varies according to the complexity of the words.



1000 downloads
(~4 per day)

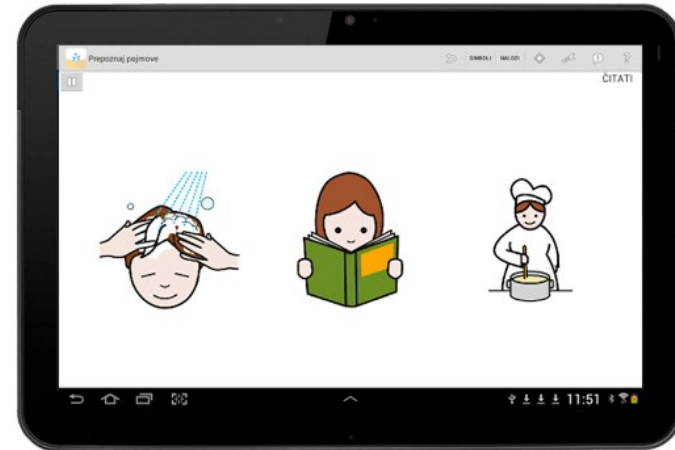
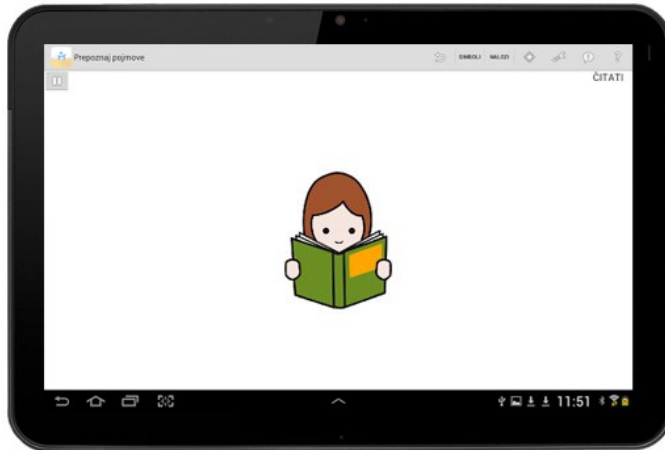


275 downloads
(~1,75 per day)

ICT-AAC Application: *Learn Words*



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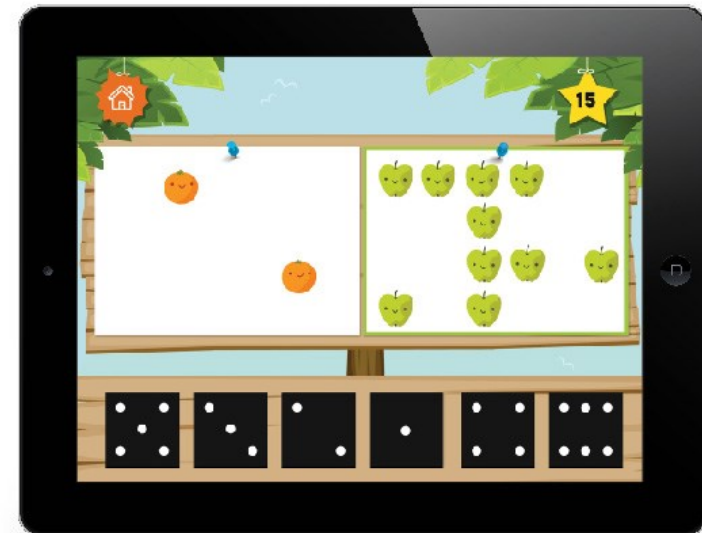


Application for teaching new words to persons with special education needs. The teaching model follows the principles of the **Applied Behavior Analysis (ABA) and Discrete Trial Teaching (DTT)**.



**650 downloads
(~3 per day)**

ICT-AAC Application : *Domino Counter*



The application provides in an attractive way early experiences with the **meaning of terms „amount” and „number”**, aided with symbols and sounds.



450 downloads
(~5 per day)

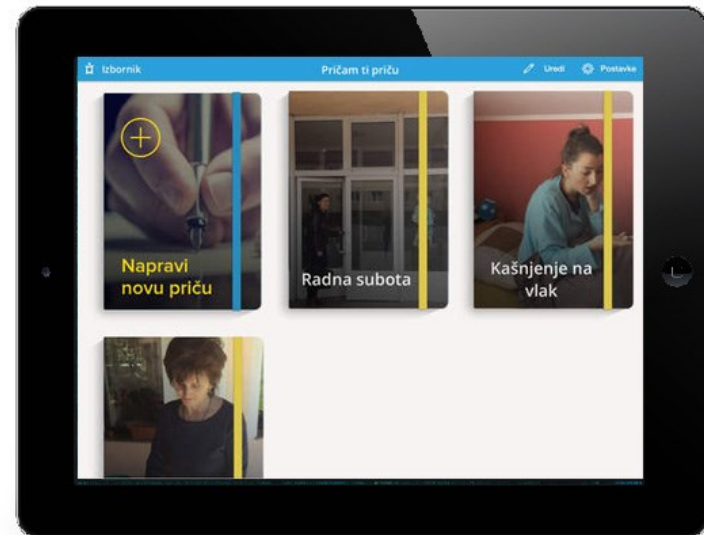


50 downloads
(~1,5 per day)

ICT-AAC Application : *e-Galerija Senior*



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The application is aimed for **senior users** and is useful in **retaining the capabilities** of complex sentence creation, **training** the memory and naming acts, events, people and objects.



110 downloads
(~2 per day)

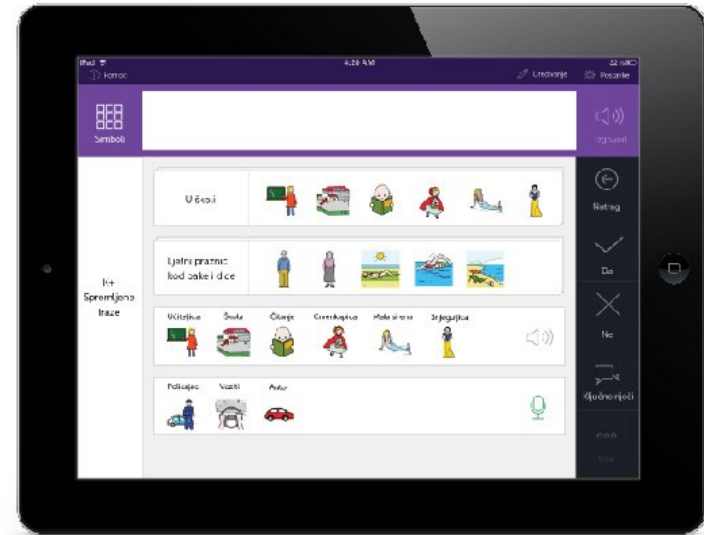
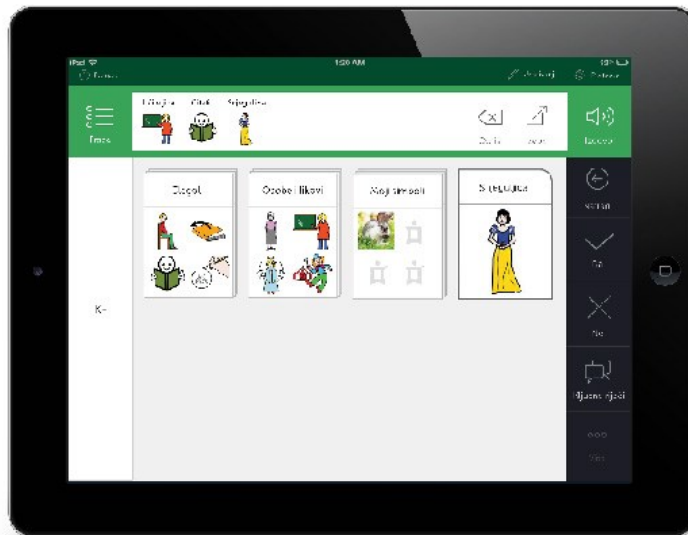


25 downloads
(~0,5 per day)

ICT-AAC Applications: *Komunikator+*



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The most complex application that is advanced version of the Communication application that enables user to **create symbol based sentences** with corresponding voice reproduction.



481 downloads



223 downloads



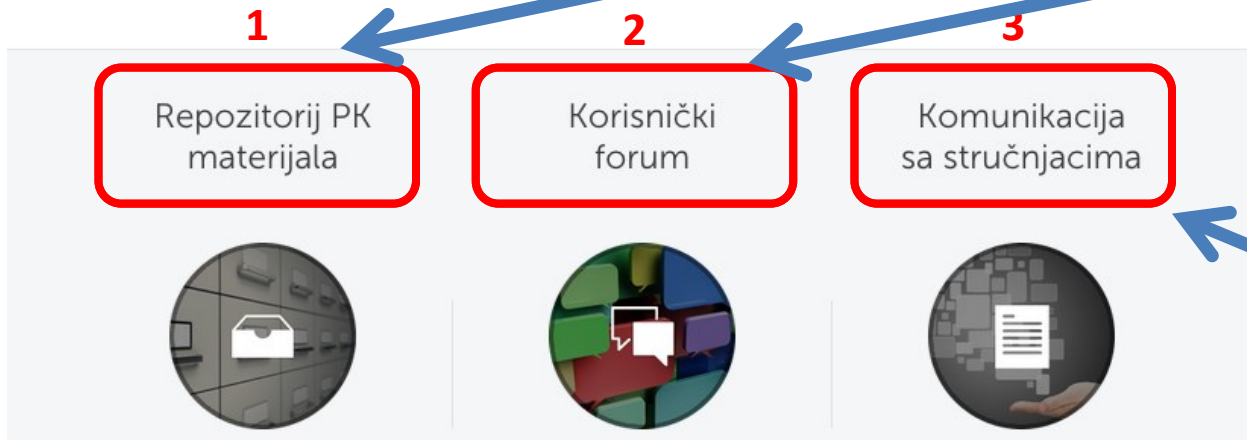
published 03/2015.

Symbol based
learning and
communication
web repository

Mreža podrške dio je ICT-AAC projekta napravljen za Vas

Saznajte više o projektu na [službenoj web stranici](#)

User forum



Communication
with professionals

.... after the Project



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- **ICT–AAC Competence Network** – formal agreement between project partners and some of associates
- Joint application for future projects and research
- **The harmonization of parenting and career through multi-disciplinary social services (Multi-harmony)**
 - Financed by: **European Social Fund** (Call: The expansion of the social services network in the community)
 - Started: 28 September, 2015
 - Duration: 14 months

Find us ...



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- YouTube channel: <http://www.youtube.com/ictaachr>

