



9th Teaching & Education Conference, Prague

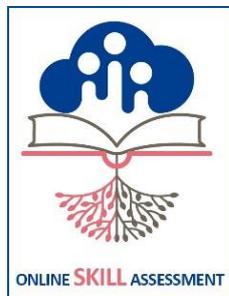
Conceptual Framework of Adaptive Web Based Skill Assessment Tool Designed for Low Qualified Adults in Turkey

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Aim of Study

«To compose a conceptual framework for literature and institutions which aims to create an adaptive assessment test for measuring skill levels of low-qualified adults.»



Why measuring skills ?

- planning a career for labor market
- to get information to plan individualized learning
- planning trainings,
- ensuring quality
- creating homogeneous learning environments



Why to use adaptive skill tests?

- Skill tests are the main tool to get information and assume about adults' skills
- Traditional test have several disadvantages for determining skills of low qualified adults correctly
- Asking the same questions, long test times, asking questions in the same order, reduce the reliability and validity of the skill assessment test
- Computer adaptive tests reduce the amount of test time, dynamically customize the flow of questions, and show a result with a minimum amount of questions based on the answers of each exam participant



To compose a conceptual framework for tests

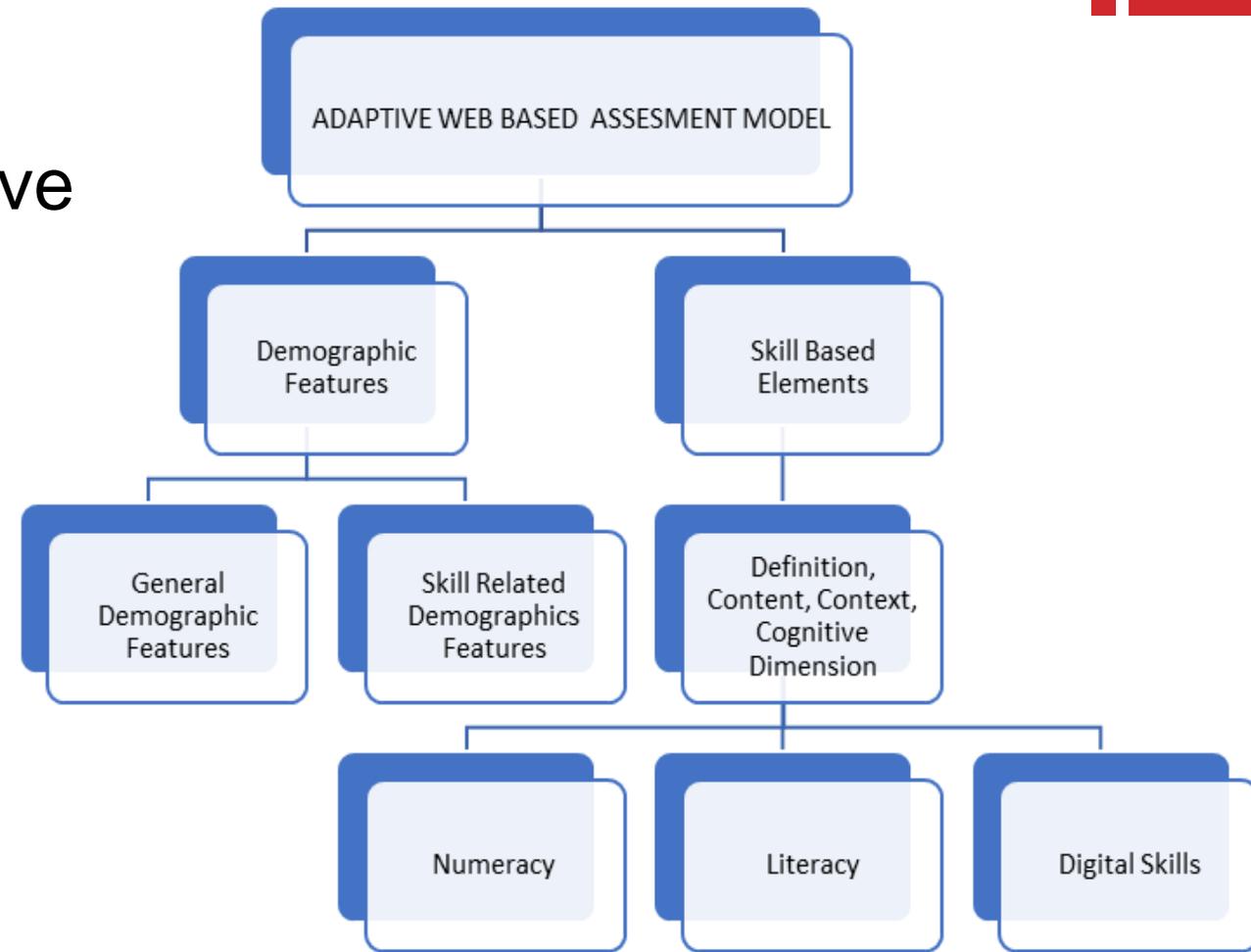
- It is very important to establish the conceptual and theoretical structure of the evaluation system to determine the skill levels of individuals
- To create a correct model, all factors that may affect the evaluation process, evaluation methods, target audience analysis and content analysis should be carried out in detail.
- The aim of this conceptual framework and to create a model is to provide a strong foundation for institutions and researchers that can be used for assessing low skilled/qualified young adults.



Conceptual Framework of Study

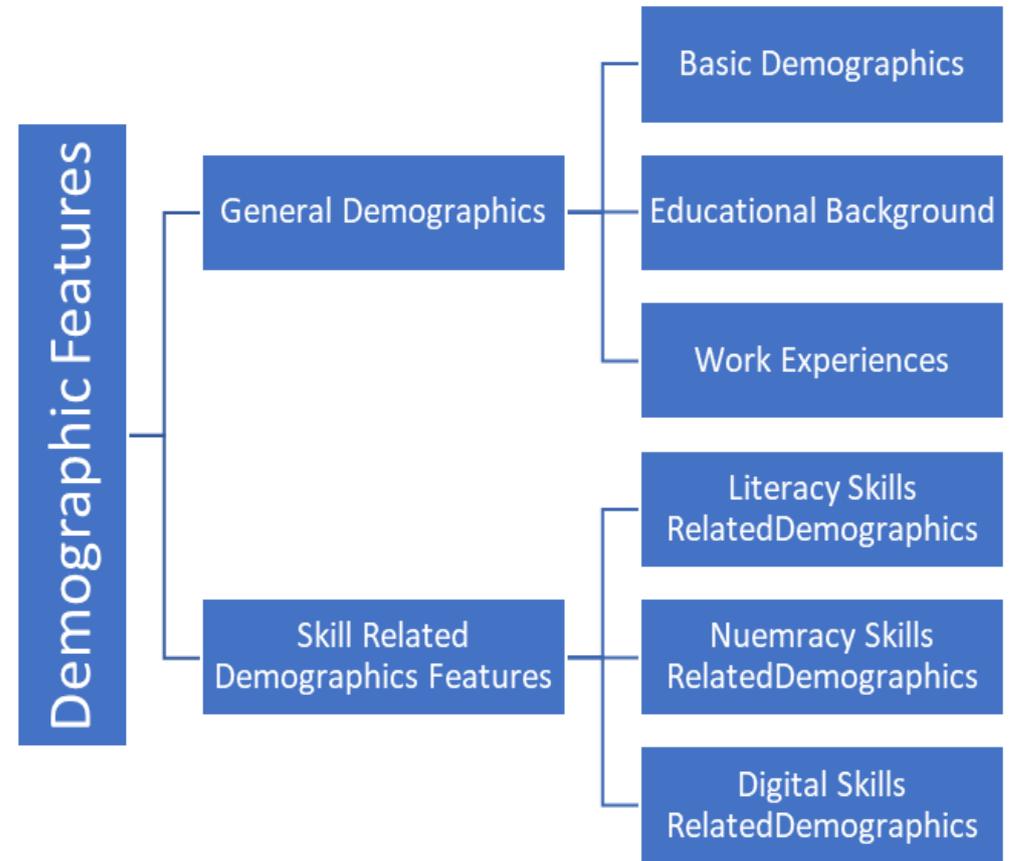
Conceptual Framework of Adaptive Web Based Assessment Tool two dimensions:

- 1- Demographic features,
 - 2- Skill Based Elements.
- Demographics features were divided to two factors



Demographic Futures

- General Demographics has two subcategories,
- 1- Basic Demographics, Educational Background, Work Experiences.
- 2-Skill-related Demographic features consist of items related to each skill.



Skill Based Elements

Skill Based Elements (for literacy, numeracy, and digital skills) was performed including four factors: Definition, Content, Context and Cognitive Dimension.

- **Definitions:** Firstly, Skill Based Elements are defined and the boundaries that constitute these elements are drawn in accordance with the national curriculum. Special definitions and properties of each skill area are specified.
- **Content:** Considering the primary and secondary school curricula and the effects of these curricula on today's life, a content structure was created for each skill area.
- **Context:** The areas, situations, and contents defined by the skills to be measured were determined within the scope of content and definitions.
- **Cognitive Dimension:** The cognitive states related to the skill to be measured are determined and classified.



Skill Based Elements

- A strong conceptual framework should be drawn to create rules and hierarchy in adaptive assessment systems. The creation of the conceptual framework is considered the first stage of adaptive assessment systems.
- In this study a detailed conceptual framework was composed for each field. Literacy, Numeracy and Digital Skills. The conceptual framework of each skill area was created by experts as a result of literature reviews, detailed analysis of Turkish Education Systems, and Registration of Statistical Institutions.



Conceptual Framework of Turkish Numeracy

Literacy Skills: 4 content subcategory, 11 Cognitive Dimension, and 4 main contexts were composed

Table 1. Conceptual Framework of Turkish Literacy.

Definition	Expressing and interpreting concepts, thoughts, opinions, feelings and facts both verbally and written (listening, speaking, reading and writing); to engage in linguistic interaction in all social and cultural contexts, such as education and training, workplace, home and entertainment (MEB, 2018 Communication Competence in Native Language)
Content	Listening/ Watching, Vocabulary, Understanding, Writing
Context	Personal, Workplace, Education, Social (entertainment, communication etc.)
Cognitive Dimension	Recognition, Explanation, Prediction, Comparison sorting, Classification, Integration, Application, Relationship building, Analyzing, Interpretation, Evaluation

Conceptual Framework of Turkish Literacy

For Numeracy skills: 5 content subcategory, 5 Cognitive Dimension and 3 main contexts were determined

Table 2. Conceptual Framework of Turkish Numeracy

Definition	Numeracy literacy is the ability of an individual to interact , access, use and interpret information in explaining a series of mathematical needs in their life. In other words, digital literacy is an individual's ability to interpret qualitative and numerical data, establish a time-space relationship, solve problems, and perceive the surrounding world correctly using judgement and decision-making processes.
Content	Measuring, Estimation and calculation, Recognizing and using verbal / symbolic expressions, Graphic reading and interpretation, Problem solving
Context	Business-related skills, Personal abilities, Skills related to society and social life. etc.
Cognitive Dimension	Knowledge, Understanding, Application, Evaluation, Formation

Conceptual Framework of Digital Skills

Digital skills, 14 content subcategory, 6 Cognitive Dimension and 2 main contexts were composed

Table 3. Conceptual Framework of Digital Skills

Definition	Digital skills are defined as "the various capabilities that individuals are expected to have in using digital devices, communication applications, and networks to access and manage information." It enables people to create and share digital content, communicate and collaborate, and produce effective and creative ways of solving life, learning, work and social activities.
Content	The Importance of Information Technologies in Daily Life, Computer Systems, File Management, Ethical values, Digital Citizenship, Privacy and Security, Computer Networks, Communication Technologies and Collaboration, Word Processor Programs, Presentation Programs, Spreadsheet Programs, Audio and Video Processing Programs, Problem Solving Concepts and Approaches, Programming
Context	Business-related skills Personal abilities
Cognitive Dimension	Knowledge: Knowing, recognizing, remembering, reciting Comprehension: Information assumption, estimating, assimilating, translating, adapting to other examples. Application-reflection: Solving a new problem, reaching solution, making transactions, making calculations, adapting to the situation Analysis: Dissecting the whole, finding relationships, analyzing, revealing similarities and differences Synthesis: Combining elements according to certain rules, creating a new whole, developing original ideas, producing something unique Evaluation: Criticizing, judging, appreciation, discussing conclusions, summarizing according to internal and external criteria.

Conclusion

- Creating a conceptual framework for web based adaptive testing systems is one of the most important part of designing process and ensuring reliability and validity of systems.
- Constructing a strong conceptual framework will have a big contribution for integrating parts of adaptive assessment systems such as entry point, item pool, stopping rules, time issues , content sampling, exposure controls assessment rules, test organization, scoring methods and algorithms(Chalhoub-Deville at all, 1996, Kravcik at all, 2005).



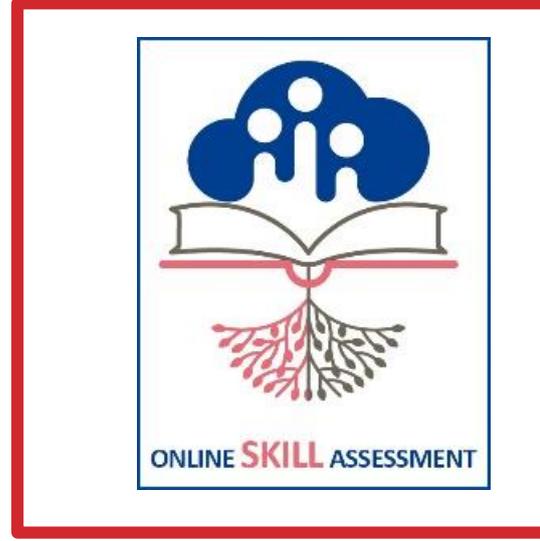
Conclusion

- Based on the skill scores obtained from the web-based adaptive evaluation system, individual training will be provided with e-learning technologies in a smart learning environment. At this point, well-organized and consistent adaptive evaluation is an important step, because determining the skill levels of low-skilled people makes it easy to provide appropriate feedback to all participants in the system.
- This and similar assessment and learning models focusing low skills adults can be used in commercial entrepreneurship, social entrepreneurship, creativity and vocational training required by today's labor market.



Acknowledgement

Authors are grateful to project contract Number: VS/2019/0127 receiving financial support from the european union programme for employment and social innovation "easi" (2014-2020). For further information please consult: <https://onlinebeceri.com/en/>



Thank you...
Questions???

