



Individualised instruction

Background

The summary below presents the research evidence on individualised instruction in the Arab World context.

The Teaching & Learning Toolkit focuses on impact on outcomes for learners; it presents an estimate of the average impact of individualised instruction on learning progress, based on the synthesis of a large number of quantitative studies from around the world.

This page offers a summary and analysis of individual studies on individualised instruction in the Arab world. In contrast to the Toolkit it includes studies which do not estimate impact, but instead investigate the implementation of interventions and how they are perceived by school leaders, teachers and students using a range of research methods. This information is valuable for school leaders and teachers interested in finding out more about particular examples of individualised instruction interventions that have been delivered in the Arab world.



Summary of the research in the Arab World

Individualised instruction provides different tasks for each learner and provides support at the individual level. It is based on the idea that all learners are different. Not only their previous knowledge is different, but also their characteristics, tendencies, capacity and talents. Therefore, they have different needs, so an individualised or personally tailored approach to instruction ought to be more effective, particularly in terms of the tasks and activities that students undertake and the pace at which they make progress through the curriculum. Examples of individualised education have been tried over the years in education, particularly in areas like mathematics where students can have individual sets of activities which they complete, often largely independently. Particularly, when average and low-achieving students were provided with a computer-assisted system in mathematics their problem-solving skills improved. Students were able to solve the addition and subtraction word problem because they were engaged in active learning materials designed to help students understand the problem, draw a representation, write a solution, and explain it. Chadli et al. (2018) tested a computer-assisted problem-based learning system on mathematics achievement of Grade two low-achieving students attending four classes in two elementary schools in Algeria. The system evaluated students' procedural knowledge and provided a graphical preview of all the addition and subtraction worksheets on a vertical problem format. Results of this study showed that students' mathematical representations and solution explanations became more accurate after the learning activity. Practicing problem solving through the computer was valuable for low-achieving students despite having some difficulties on the last part when reviewing the solution. Training students for the period of five weeks was a main factor that promoted the success of this computer-assisted problem-based learning system.

Research in the Arab world has mostly focused on the effectiveness of online learning platforms to individualize and differentiate the instruction based on students' needs. For example, in the United Arab Emirates, a quantitative study was conducted by Alyammahi (2019) to evaluate the impact of Alef Platform on students' motivation, engagement and performance. During the academic year 2017/2018, 240 students in grade six at one school in Abu Dhabi received the instruction in key subjects Islamic, Arabic, English, Math, Social Studies, and Science



through Alef platform. Findings of this study showed that learning through this digital platform inside the class has enhanced their motivation, made learning fun, increased their understanding and performance in the studied topic. Students were able to understand the academic concepts and were more engaged in the subject matter which in turn positively impacted their confidence and independency.

Similarly, Al-khalaileh & Alsharo (2018) demonstrated that using programmed instruction is an effective approach to ensure an individualized instruction for improving students learning and performance. In an experimental study, middle school students in Jordan used a learning software for their science lesson. A purposive sample of 72 public-school students was equally divided into experimental group (who were taught by programmed instruction) and control group (who were taught by traditional method). Various activities were provided to students and designed based on their abilities and levels. Students were able to access the lesson at their own pace and were able to master the skills within the lesson's activities. Furthermore, they were able to control their learning by controlling the pace of the lesson and activities. As a result, the experimental group performed better on the posttest and their grades were higher than their peers in the control group.

In another study, ALEK software was made accessible on the iPads of female secondary students in the United Arab Emirates for the period of 20 weeks to be used as an intelligent tutor and teach them math and statistics. This software provided explanation and practice on basic arithmetic, algebra, geometry, and statistics. This software detected each student prior knowledge about the subject, offered them with a chance to master all topics as per their learning pace, and provided them with immediate feedback about their progress. Students who used ALEK showed higher attainment of factual and procedural knowledge, but the software couldn't measure their meta-cognitive skills because students weren't able to demonstrate the strategies used for problem solving. Other drawbacks for using the intelligent tutor were that it did not take into consideration the learning styles, efforts, cognitive abilities, and affective state of learners or even their availability in using the technology which could have impacted their achievement differently (Dani & Nasser, 2016).



Flipped classroom is another approach for individualized instruction that teachers may use to meet the diverse needs of learners based on their expertise levels. In a quasi-experimental study conducted in Saudi Arabia, Almasseri and AlHojailan (2019) showed that after 10 weeks of implementing the flipped classroom in computer science class, eighth-grade male students' achievement levels increased with respect to Bloom's higher order thinking skills, that is, in the areas of applying, analyzing, and evaluating new learning. Students in the experimental group reported that they benefited from the instructional guidance they received in an e-learning environment. They practiced self-paced learning at their individual levels of speed and understanding of the material, benefitted from multimedia features, such as the ability to pause, rewind, forward, and replay the lesson. Class time was used to engage learners in activities that adopt active learning strategies such as problem-solving and explaining advanced concepts of the subject.

These educational online platforms are acknowledged as a support for individualized instruction in class and do not replace teachers in the classroom and will not disengage teachers from their students. They are designed to change the workload of the teachers by giving them the opportunity to work smartly and effectively for the benefit of each student. Rather than spending hours working on planning lessons and gathering and analyzing data the teacher can now use that time preparing individualized instruction to address the specific needs of her students Alyammahi (2019). However, the learning environment in the Arab world is not yet prepared for technology implementation in curriculum and instruction. Researchers argue that for online digital platforms to be implemented successfully, a cultural transformation with significant change management to support the online learning environment is required. Alyammahi (2019). That is why in addition to online sources, researchers examined other non-technological based approaches for individualized instruction.

For example, in an experimental study, Al-Yahmedi, Al-Busaidi and Al-Seyabi (2019) investigated the effect of Word Study approach on the development of spelling performance of 66 grade five female students in the Sultanate of Oman. Word Study approach is a spelling program that explicitly teach students spelling patterns by focusing on their level of development and learning needs. In this



program, the teacher provides appropriate leveled instruction (i.e., spelling list) for each child based on their stage of development. During the Word Study, students with similar needs and level of development work together while the teacher provides support to them through clues, examples, and continuous encouragement. After the implementation of this approach in the English language class for the period of five weeks, students in the experimental group who studied spelling using Word Study approach performed better on the spelling inventory posttest comparing with the control group who studied spelling using the traditional based approach.

Furthermore, using differentiated teaching of the English language was effective in developing skills of listening comprehension and creative thinking among students of the secondary third grade students in Saudi Arabia (AlShareef, 2015). Teacher differentiated the level of the tasks based on the needs, styles and interests of each learner. In this quasi-experimental study, students in the experimental group (n=28) studied using different teaching strategy for one month while students in the control group (n= 27) studied the same topic but using the traditional way. Findings of this study were evident that students' performance in the experimental group for listening comprehension and creative thinking were better than the control group. Despite its benefit, implementing differentiated instruction in classrooms had many obstacles. Male and female teachers in Saudi Arabia reported that the biggest challenge is related to the school environment (Aldossari, 2018). The density of students inside the classroom, the lack of educational equipment and instruments, lack of teachers preparation programs and their confusion about their understanding for this new approach had the highest means. Not only that but teachers believed that students are used to traditional teaching strategies and that they find difficulties in adapting with the skills and activities of a differentiated instruction strategy (Aldossari, 2018). In light of these results, teachers in general are recommended to use the differentiated teaching strategies. Curriculum designers are invited to reconsider the process of formation of the curriculum in accordance with the requirements of differentiated teaching. Additionally, for differentiated teaching to be implemented successfully, studies like Aldossari (2018) and AlShareef (2015) recommended teachers and educational supervisors to be trained on using differentiated teaching during their service and introduce them to its advantages,



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benefits and ways by which differentiation works. Additionally, including differentiated teaching in the theoretical and practical academic courses in colleges of education could prepare preservice teachers for implementing such approaches in their instruction. Training students to use this effective educational strategy and preparing educational software based on the curriculum and learning objectives are necessary to ensure a successful individualized instruction for learners (Al-khalaileh & Mohammad Alsharo, 2019).



Summary paragraph:

Evidence from the Arab World shows that individualized instruction is a promising strategy for meeting students' needs and improving their learning. Studies in Saudi Arabia, United Arab Emirates, Jordan, Algeria, and Oman reported that when teachers differentiated their instruction and designed learning tasks based on the individual students differences, their achievement, engagement in their learning, and self-confidence improved.

Researchers have highlighted some potential barriers for teachers to use individualized instruction as a teaching approach in their classroom. Examples include lack of teacher training, large classroom size, and lack of educational equipment and instruments are among the main obstacles.

To date, research in individualized instruction is limited in this region despite the few reported benefits. More research is needed in this area, especially to collect data regarding the reality of the perception and use of teachers of the differentiated teaching strategy. Furthermore, longitudinal studies are needed to investigate the long-term impact of online platforms used for individualized instruction on students motivation, engagement, and performance. More future research should be conducted over a larger sample size in order to validate the findings.



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Search Terms

Individualized programs, individualized transition plan, intelligent tutoring systems, pacing, individualized instruction, individualized reading, individualized education programs, individualized instruction, self-pace, tailored instruction, personalized education, programmed instruction, prescribed instruction, accordance with needs, individualized literacy instruction, direct-instruction tutoring, personalized system of instruction.

Databases searched

Academic search complete

ERIC (EBSCO)

Education Source

Google scholar

ProQuest Central

ProQuest Dissertations

Web of Science