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Innovation in Islamic Religious Education for Elementary School Students by Empowering Sophisticated Digital Resources

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Abstract. Modern religious education faces difficult challenges caused by rapid technological advances and changes in the socio-cultural environment. One of its main tasks is to improve the quality of religious education and ensure the effectiveness of religious learning in elementary schools. The dissemination of knowledge through technology is an urgent matter but it is also necessary to develop competencies and adapt to today's world. The aim of the research is to analyze and improve the methodological competence of educators by using digital educational resources for religious education. The research method used was empirical with a total of 360 respondents. Data collection techniques include observation, interviews and surveys, monitoring student learning activities, studying teacher experiences, conducting practical-experimental discussions, surveys, as well as analyzing and evaluating student work results. Analysis techniques include methodological reflection, critical evaluation and quality revision, analysis of methods and exercises used in terms of suitability and effectiveness. As a result, digital educational resources were found to be an effective method in forming the professional orientation of future religious educators. These findings encourage the professional training of future educators and to improve professional qualifications in basic education institutions. Conclusion, the importance of integrating digital technology into the educational process to improve the quality of education and develop student competencies.

Keywords: Educational Resources; Religious Education; Teaching Competency Modern; Educational Technology

1. Introduction

Modern education is experiencing an era of global transformation of Islamic religious education driven by rapid technological advances and changes in the socio-cultural environment. In this context, improving the quality of Islamic religious education at the primary school level and the effectiveness of teaching remains one of the main priorities of educational science and practice. The transmission of knowledge is becoming increasingly important, along with the development of competencies that support successful adaptation to changing living and working conditions in the modern world. Within this framework, special attention is paid to the field of computer science education, where the issues of pedagogical methodological competence and the use of digital technologies play an important role (González-pérez & Ramírez-montoya, 2022; bidin A, 2017). Today's education faces numerous challenges, including the need to adapt to rapidly changing information and technological landscapes, preparing for professions that do not yet exist, and fostering skills required to solve complex problems on a global scale. In this new reality, the role of educators extends beyond mere knowledge transmission, encompassing the development of students' critical thinking, communication skills,collaboration, and creativity. Pedagogical methodological competence in the context of such education emerges as a key factor determining educators' ability to successfully achieve these goals (Corres et al., 2020). Special attention in this context is devoted to the field of computer science and digital technologies. In the modern world, computers and the internet play an integral role in everyday life, with their influence on education becoming increasingly significant. Computer science education not only equips students with necessary technical skills but also enhances their ability to analyze, problem-solve, adapt to new technologies, and collaborate effectively. Moreover, computer science plays a crucial role in

developing teachers' methodological competencies, enabling them to effectively integrate digital technologies into the educational process while considering the unique needs of students and educational goals (Basilotta-Gómez-Pablos et al., 2022). Digital technologies provide unique opportunities for innovation in education, allowing for the creation of interactive learning materials, personalized learning courses, and facilitating access to education anytime, anywhere. However, successful integration of digital technologies into education requires not only the presence of appropriate infrastructure but also the development of teachers' methodological competence. Educators must be proficient in effectively utilizing digital tools in their practice, adapting them to specific educational tasks, and assessing their impact on the learning process and student outcomes (Sormunen et al., 2022).

1.1. Problem Statement

Modern education in the Islamic religion, especially in elementary schools, is experiencing a period of digital transformation, which requires religious teachers to develop digital competencies for the successful teaching of generations with good morals in the future. In this context, Teacher Digital Competency (TDC) systems are becoming increasingly important, guiding policies and professional development of religious teachers in the use of modern technologies such as artificial intelligence (AI) and the metaverse. The aim of study (Truong & Diep, 2023) is to propose and analyze research models and determine strategies to support the needs of Islamic religious education digitally. The results of previous research involving 370 school teachers showed that there was a positive impact of learning support in schools on TDC and meeting needs, which is a key factor in developing teacher competence in the field of artificial intelligence. However, this research offers practical recommendations for developing policies and culture for digitally assisted Islamic religious education in elementary schools that can meet the needs of Islamic religious teachers and contribute to the development of students' digital competence. This is what was recommended in previous research for further investigation in this research. It is important to note that the TDC system covers a wide range of competencies necessary for the successful professional development of future educators in a rapidly changing educational landscape.

Artacho et al., (2020) discusses the formation of professional competencies among future religious educators in the field of information technology (Nychkalo, 2023). One promising approach in developing teacher digital competence is the SAMR model, which integrates various aspects, such as technology knowledge, pedagogy, and content(Assunção & Ramos, 2023). This model is an effective tool for teachers' professional development and can help improve their competence in the use of digital technologies in educational practice. The advantages of effectively developing methodological competence among future computer science teachers by using digital educational resources based on the SAMR model are as follows (Tlili et al., 2023), (Lee et al., 2022): 1. Expanding learning opportunities for primary school students, namely the use of digital educational resources, allows you to expand learning opportunities through access to various interactive materials, applications and online tools, which enriches the learning process and makes learning religion more dynamic. 2. Individualization and differentiation of training. Digital resources allow you to tailor learning to the individual needs and learning pace of each student. This creates a more effective learning environment and improves overall student performance. 3. Development of critical thinking and problem solving. The SAMR model encourages educators to create assignments and projects that require students to analyze, evaluate, think critically, and solve real-world problems using digital tools. This contributes to the development of key competencies that are essential for career success in the information society. 4. Stimulate creativity. Digital resources allow you to create and share your own teaching materials and projects, which helps develop creative skills for both teachers and students. This can also lead to the creation of innovative educational approaches and methodologies. 5. Preparation to face the needs of the modern labor market (Assunção & Ramos, 2023). Effective use of digital educational resources based on the SAMR model helps students develop the skills necessary to succeed in the modern information society, where digital technologies play an important role in many areas of life and activity. Thus, the benefit of building effective teaching competencies using the SAMR model

and digital learning resources is to create deeper, interactive, and adaptive learning experiences that help develop key skills and prepare students to face today's challenges and opportunities. Based on literature analysis, there is a gap between theory, expectations and reality in the field. Previous research recommends that using technology can help teachers convey material well, but in fact teachers, especially religious teachers in elementary schools, have not fully used technology in learning, so what is expected by elementary school students has not been achieved. This gap requires further research in the field of digital competence of religious teachers, as well as the importance of integrating new models and approaches for their professional development in the digital era (Tondeur et al., 2021).

1.2. Related Research

Grinshkun et al., (2021), The teacher's main task is to prepare material in a highly skilled professional manner with modern digital skills according to the times, including the use of augmented reality (AR) in professional activities. Teachers who have good competence must be able to hone and develop themselves with the help of technology. This aims to ensure that the learning process runs smoothly and meets the expectations of students today, namely technology-based learning (Assunção & Ramos, 2023). In research Assunção & Ramos, 2(023), it is said that the learning applied to elementary school students based on religion can be applied with the help of digital technology media. This encourages students to be more active in obtaining reading sources with the help of technology. Teachers can be facilitated by providing training to be able to master technology in delivering the material to be taught (Assunção & Ramos, 2023). Various aspects of the formation of digital competence among future teachers are discussed, including identifying key digital skills, pedagogical strategies for integrating technology into the educational process, and methods for assessing the development of digital competence (Assunção & Ramos, 2023). Although teachers are interested in using AR in educational activities, their level of knowledge and practical skills in this area is still lacking. However, the development of technological approaches to forming digital competencies, including the use of AR, is a promising direction in future teacher education. In contemporary society, university education requires an active and participatory educational model that encourages competency development, including digital competency (Sormunen et al., 2022). Study (Bilbao-Aiastui et al., 2021) presents the results of educational innovation at the university level aimed at analyzing the impact of active methodology supported by technological means in a virtual classroom on the development of students' digital skills. A quantitative methodology was employed with preliminary experimental testing. The results show improvement in five areas of digital competence, as defined by the General Framework for Digital Competence for Teachers (MCCDD) by the National Institute of Educational Technologies and Teacher Training (INTEF) in Spain, with a significant effect. The conclusion is that the educational experiment helped enhance the level of digital competence among future teachers (Antonietti et al., 2022).

1.3. Research Objectives

This research is urgent to carry out because there is a gap between theory, expectations and reality on the ground. So, by knowing the level of self-efficacy of religious teachers at the elementary school level, knowledge and good moral values will increase educational progress. because in previous research the level of self-efficacy of teachers in the field of mathematics and natural sciences with digital integration has been found, but what is new in this research is that the level of efficacy of religious education teachers needs to be researched against the background of this information, so this research aims to analyze and identify the level of teacher quality. in elementary schools by looking at the relationship between self-efficacy and teacher quality in elementary schools, and assessing their influence. Self-efficacy towards the quality of Islamic education teachers in elementary schools.

2. Theoretical Framework

Shubina et al., (2021), the focus is on the use of digital tools to develop methodological competence among future computer science and religious education teachers. The author explores various digital educational resources and their impact on the development of students' methodological skills in religious education. This article also discusses strategies for

integrating digital tools into academic programs for the effective education of future religious teachers. Hennessy et al., (2022) investigates the intersection of technology, education, and professional development, paying particular attention to the changing role of teachers in the digital age. They study the concept of digital competence and its significance in modern pedagogical practice. In addition, this research examines the emergence of a new learning environment facilitated by technological advances in religious education, which leads to the formation of large amounts of data, which is usually referred to as big data (El-Haddadeh et al., 2021). This research aims to assess the level of digital competence among teachers, especially in the field of information, and analyze the importance of understanding and utilizing big data in the educational context (Torres-Hernández & Gallego-Arrufat, 2022). Using descriptive and correlational quantitative methodology, data was collected from 832 Spanish teachers via questionnaires. The results show a moderate level of digital competence among teachers, with marked strengths seen in areas related to data storage and retrieval. Additionally, this research highlights teachers' increasing awareness of big data concepts and their ability to use digital data to improve teaching practices. Overall, this study underscores the importance of digital competence in shaping religious teachers' skills in navigating and utilizing technological resources in Islamic religious education institutions, especially in the era of big data. Bygstad et al., (2022), focuses on analyzing the challenges faced by modern computer science teachers in the context of digital transformation in education. This emphasizes the need to develop digital competence among educators, which not only requires knowledge of the legislative framework and the specific digital environment, but also readiness to integrate digital technology into the Islamic religious education process. The author proposes the use of competency-based and activity-based approaches in developing professional development programs for computer science teachers, as well as the principles of a systems approach in determining the structure of digital competencies. They also explore interaction scenarios between teachers and students in digital educational environments. These conclusions underscore the importance of teachers' readiness to create high-quality digital educational content, manage students' cognitive activities, and provide a comfortable and safe educational environment. The professional development program for religious teachers is logically connected, covering the entire spectrum of digital competencies, from everyday use to creative application in the pedagogical practice of religious teachers.

3. Method

3.1. Research Design

The method in this research is empirical methods, namely interviews and surveys. The use of this method is to address the task of increasing the methodological competence of religious education teachers using digital educational resources, a methodology was developed based on monitoring student learning activities, studying teacher experience, practical-experimental discussions, surveys, and analysis of student work results. The main objective of this research is to determine the importance of digital educational resources as an effective method for forming the professional orientation of future computer science teachers. To achieve this goal, theological methods are used, including analysis of philosophical literature, psychological-pedagogical, and scientific methodology, as well as empirical methods involving interviews and surveys. The research results make it possible to determine the importance of the digitalization process in shaping the professional orientation of religious science and computer science teachers in the future. The results of this research can be used in the professional training process for prospective religious teachers in elementary schools and to improve their professional qualifications. The main reference in this research is elementary school students.

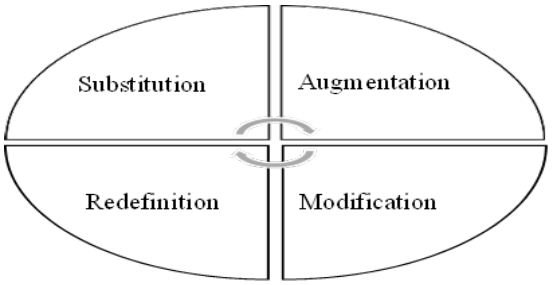

Figure 1. SAMR Model

Modernization of the national education system requires the development of new approaches in the implementation of the religious education process. In this context, creating a digital education process is an important task that requires scientific evidence based on digital didactics for religious education (Gaidelys et al., 2023). Digitalization, as a stage of modern information development, is characterized by the dominant use of digital technology to process learning, distribute and transmit information. This involves the creation of new products in digital form, such as dynamic educational courses and interactive document interpretation systems. SAMR Model (Blundell et al., 2022), helps explain how digital technology contributes to the religious education process, from simply replacing traditional teaching methods to changing and rethinking the educational process itself.

3.2. Respondent

The population in focus is educators, especially in the fields of computer science and religious education. This research sample involved 360 religious education teachers who taught in schools as the main respondents. This number of respondents is sufficient to provide data that is the basis for drawing conclusions in this research. These respondents were chosen because of the relevance of their profession to the development of digital competencies in the education sector. This sample selection technique is based on experience, in accordance with the field, namely religious educators and passive computer mastery and selected through their participation. Researchers can analyze the positive impact of learning support in schools on digital education needs and teacher satisfaction in developing their competencies in the field of artificial intelligence. By involving a representative sample of the school teacher population, this research can provide valuable insight into strategies to support digital education needs and develop teacher competence in facing the demands of ever-changing times.

3.3. Data Collection

The SAMR model (Substitution, Augmentation, Modification, Redefinition) describes how information technologies impact the process of teaching and learning. This model includes four stages: 1. Substitution: Using technology to perform the same tasks as before but with digital tools. For example, reading e-books instead of printed ones. 2. Augmentation: Using new technologies to perform tasks more efficiently and effectively. For example, using additional features of office applications to create presentations or conducting online surveys. 3. Modification: Using information technologies for collaboration and discussing results online. 4. Redefinition: Creating new products or ideas that would be impossible without digital technologies, such as creating a personal website or an electronic journal. In our case, the SAMR model is applied as follows. 1. Substitution: Technologies are used for the same purposes as before (prior to the advent of computers). For example, a student reads from an e-book instead of a printed book. Consequences: Nothing changes in the learning process. Student engagement remains the same, as there is no real enhancement due to the use of technology. As an instructor, the teacher directs all aspects of the lesson and remains the central figure in the classroom. 2. Augmentation: We not only use new technologies to perform old tasks but also strive to solve problems more efficiently and effectively. For instance, a student not only uses Office for typing text instead of handwriting but also utilizes its additional features (inserting videos, spell checking, drawing tables, blocking snapshots) or uses online tools to make classroom surveys more efficient. Consequences: At this stage, the focus of learning begins to shift from the teacher to the student. Due to immediate feedback, students become more

engaged in the learning process. 3. Modification: Classroom tasks are performed using information technologies. Examples include using online tools for collaboration, publishing results on the Internet, discussing them, and jointly improving them. Consequences: Significant functional changes occur in classroom work. Although all students develop the same skills, having a specific audience gives each student a personal interest in producing quality work. 4. Redefinition: At this stage, students can create what would not have been possible without information technologies (a website, an e-book, a personal blog, a digital journal). Consequences: At this level, common classroom tasks and information technologies are not seen as goals but as learning tools that engage students' attention. Collaboration will be required, and technologies will facilitate it. Therefore, the simple replacement of familiar technology (Substitution) leads only to passive information perception, resulting in nothing but simple recall (this corresponds to the first level of Bloom's taxonomy). In this case, "information technologies" refer to electronic book versions, basic editors, and note-taking tools. At the level of augmentation (Augmentation), learners can comprehend the material, translate it from one form to another, and use it according to a template, which corresponds to levels 2-3 of Bloom's taxonomy.

The levels of modification and redefinition (Modification, Redefinition) are associated with information analysis, creating something new, evaluating the results of others, and discussing new ideas. In this case, we are dealing with levels 4-6 of Bloom's taxonomy. At these levels, information technologies, collaborative tools, creation of digital artifacts, online commenting, etc., are used. The formation of the professional orientation of future computer science teachers in the context of using digital educational resources, including methodological orientation, is facilitated by the following conditions: - Utilization of audio, video, computer, and interactive tools in the educational process. - Organization of the educational process using new information technologies, including Internet resources. - The necessary level of information competency among teachers. - Selection of various forms, methods, and teaching approaches using electronic means, taking into account the specifics of the educational level. - Availability of modular electronic textbooks, sets of tasks tailored to the specific educational level within a continuous multi-level structure of the subject course. - Implementation of students' own project activities. - Competency-based approach, enhancing competency levels in computer science, reinforcing motivation, and promoting successful intercultural communication. It should be noted that the formation of methodological competence is based on knowledge and skills in the field of scientific-theoretical and psycho-pedagogical competence. If there is not a sufficient level of preparation in the field of computer science, a teacher cannot effectively solve methodological tasks. For example, the design of the educational process begins with the analysis of the content of learning, determining the volume and level of the material that the learner should master in any organization of the educational process.

A teacher with low scientific-theoretical preparation understands only the text of the textbook paragraph as the content to be studied. A teacher with a high level of scientific-theoretical competence understands the place of the studied content in the structure of the theory, based on this determines the place of this lesson in the subject matter, defines the type of lesson, determines the cause-and-effect relationships, reveals the logic in the relationships of individual parts of the subject. When choosing teaching methods appropriate to the level of independence of students in cognitive activity, it is necessary to assess the complexity of the material being studied. Scientific-theoretical preparation is also based on the methodological skills of the teacher in the field of special methods and techniques of teaching computer science. Without knowledge and skills in the field of psycho-pedagogical competence, a teacher cannot create and organize an educational process aimed at developing each learner, differentiate instruction, and assess the level of their activity. The structure of professional competence of computer science teachers is presented. These stages illustrate how information technologies can transform the educational process, turning it from passive information reception into active interaction and creation of new knowledge (Sailer et al., 2024), (Hobert et al., 2023). The formation of methodological competence among computer science teachers using digital educational resources involves the use of audio, video, and interactive teaching tools, organizing the educational process with the application of new

technologies, as well as considering the level of teachers' preparedness and selecting suitable forms and methods of teaching. When choosing teaching methods that correspond to the level of independence of students in the learning process, it is important to consider the complexity of the material being studied. The scientific and methodological preparation of a teacher in the field of specific methods of teaching computer science plays a key role in forming their professional competence. Without understanding the psychological and pedagogical aspects, a teacher will not be able to create an effective learning process that contributes to the development of each student, individualize instruction, and assess their level of activity (Su et al., 2022). The methodological competence of a computer science teacher implies theoretical and practical readiness of the future teacher to teach a continuous course of computer science in educational centers based on modern pedagogical teaching technologies, the ability and flexibility to improve pedagogical qualities in the conditions of educational informatization, and professional growth (Palmera & Senior-naveda, 2024).

3.4. Data Analysis

In the structure of methodological competence of computer science teachers, subject-specific and meta-subject components can be distinguished. Subject competence is formed during subject training aimed at studying computer science as a science and a sphere of practical activity (primary subject knowledge). The meta-disciplinary components of methodological competence include: - Formation occurs during the teaching of general professional - general humanitarian, socio-economic, and general professional subjects; - As a result of teaching basic methodological courses and completing coursework, the formation of methodological competence occurs during training and production practice in secondary school; Professionally oriented the development of methodological competence emerging during production practice at the university; Educational-research aimed at activating students' educational and research activities in the field of pedagogical application of computer science. Teacher's methodological competence in computer science is the ability to effectively teach computer science, relying on modern pedagogical methods and technologies, as well as readiness for continuous professional growth in the conditions of education digitalization.

The structure of methodological competence includes subject-specific and meta-subject components. Subject competence is formed through the study of computer science as a science and practical activity. Meta-disciplinary components include teaching general professional and humanities subjects, as well as developing methodological competence through coursework and practical training in schools and universities. The educational-research component is aimed at stimulating students' educational-research activity in applying computer science in pedagogical practice. Methodological competence ensures the effectiveness of the educational process, allowing for the scientifically grounded application of modern pedagogical methods. It encompasses the ability to analyze and evaluate teaching methods, as well as critical thinking regarding their effectiveness. An important aspect is providing students with knowledge of education principles and methods. Methodological competence includes the development of new methods and tools for scientific research. Computer-based activities, laboratory work, and practical exercises are particularly relevant in the process of teaching computer science. A teacher must possess information literacy to successfully organize lessons and impart necessary skills in information technology to students. Additionally, each student should have the opportunity to develop personal qualities and form their information literacy (Stopar & Bartol, 2019). If we consider the presentation of lesson types in the learning process, the teacher, with the help of a computer, demonstrates and acquaints students with various educational materials (interface elements, program excerpts, drawings, etc.) on the screen (board) according to the lesson topic (Choudhary & Bansal, 2022). The main objective of such a lesson is to provide students with new information. Information literacy is utilized in this context (Gómez-García et al., 2020). Information literacy is divided into the following main components: At its core lies motivational value, which creates conditions for learners to enter the world of values, aiding in the selection of significant motivational orientations; it characterizes the degree of motivating factors influencing a person's attitude towards work and life in general.

During the lesson, future computer science teachers should be able to demonstrate skills in working with information technologies and accurately convey their features, meaning information literacy involves transferring knowledge, skills, and abilities to new situations, the ability to make decisions independently, and moreover, every student should have the opportunity to develop their personal qualities and skills, to have the ability to freely engage in information and communicative relationships with the surrounding environment and to develop personal information literacy. In the current situation, the development of general cultural competence and personal potential of computer science teachers (sociocultural method) is a relevant issue; in this case, their actions should be based on an understanding of the paradigm of personality-oriented education (personality-oriented education). Practical use of ICT in professional activities is aimed at information and communication literacy as an integral component of the methodological competence of computer science teachers (Stopar & Bartol, 2019). Methodological competence is a structure of professional knowledge, skills, personal qualities, supported by the didactic, organizational, and analytical abilities of the teacher (Moreira et al., 2023).

The result of forming and developing methodological competence is the preparation of a computer science teacher for professional activity, the content of which can be defined by three groups of project, organizational, and communicative skills. The project skills of a computer science teacher are reflected in the design of the educational process (allocation of educational areas, justification of methods for their step-by-step implementation, planning the content and types of activities of participants in the educational process). In the organizational-qualification group of a computer science teacher (Steiner & Posch, 2006): - Motivational - developing students' continuous interest in computer science, forming skills of learning and teaching methods of organizing the information environment of individuals by creating problem situations and solving them; - Information and didactic - the ability to work with educational information resources, obtain information, and process it in accordance with the goals and objectives of the educational process; using modern teaching methods, types, and tools; - Development - stimulation of cognitive independence, intellectual and creative abilities through the mastering and use of methods of computer science and ICT tools in teaching various subjects; development of algorithmic and systemic thinking; - Adaptation to the profession - accumulation of information experience in various fields, demanded in the labor market. - Reflexive - depends on the teacher's independent, control, and evaluative activities. - Communicative - reflected in the teacher's ability to solve cognitive and communicative tasks using various sources of information, working with computer science and ICT tools. Methodological competence ensures the effectiveness of the learning process as it allows implementing the principles, content, and forms of professional training from a scientific perspective. Methodological competence includes the ability for methodological reflection, the ability to critically evaluate and revise the quality of one's own educational activities, the ability to analyze the methods and exercises used in terms of their appropriateness and effectiveness.

The future teacher should not only explain new material and organize its correct teaching but also suggest certain algorithms for completing tasks to their students, teaching them their own methods of work. In modern research, the terms "methodological competence" and "methodological competence" are often used interchangeably. Considering the concepts of "competence" and "competency" is necessary to justify the use of the term "methodological competence". Competence is an integrative resource that contributes to the overall achievement of the final goals of activities carried out in a particular socially significant sphere and ensures successful performance through acquired theoretical and practical knowledge. Competencies are narrower and more specific components of theoretical and practical knowledge, as well as specific strategies accumulated to solve individual tasks and achieve intermediate goals of activity related to competence as a whole. Content aspect of professional pedagogical training of future teachers includes such components as moral-psychological, methodological, theoretical, methodical, and technological preparation, which ensure the effectiveness of the pedagogical process carried out in mutual connection and interdependence. Additionally, methodological training is aimed at providing students with knowledge of the principles, content, rules, facts, forms, and methods of specific areas of

education and training. Methodological activity is carried out as a special scientific activity aimed at obtaining new methods and means of scientific research of new products. This is methodological competence, which has a clearly applied character, combining knowledge and skills, occupying a leading position in preparing the teacher for professional activity. It is an expanded system of knowledge and skills due to the creation of the process of teaching computer science, including its application. One of the peculiarities of computer science classes is the use of computers in the majority of lessons. Therefore, the educational process extensively incorporates demonstrations, laboratory work, and practical exercises (workshops). Additionally, excursions to centers of computer and new information technology production can be organized (Graesch et al., 2021). If we consider the representation of lesson types in the learning process, then the teacher, with the help of a computer, presents and acquaints students with various educational materials (interface elements, program excerpts, drawings, etc.) on the screen (board) according to the lesson topic. The main goal of such a lesson is to provide students with new information. In this context, information literacy is utilized (Javaid et al., 2023). Information literacy is divided into the following main components. At its core lies motivational value, which creates conditions for the learner to enter the world of values, helping to choose an important motivational orientation; it characterizes the degree of motivating factors influencing a person's attitude towards work and life in general.

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3.5. Validity

First, the use of existing frameworks such as the SAMR model and the Teacher Digital Competency (TDC) system increases the validity of the research content. This framework provides a structured approach to integrating digital technologies into education and developing educator competencies, aligning research with recognized standards and best practices in the field. Second, the selection of a sample of 360 school teachers as the main respondents adds to the external validity of the research. By involving a representative sample of the educator population, this research can generalize its findings to a broader context, thereby increasing the external validity of the results. Additionally, the emphasis on information literacy and the impact of digital resources on pedagogical practices contributes to the construct validity of this study. By exploring the intersection of technology, education, and professional development, this research addresses key constructs related to digital competency and their significance in modern pedagogical practice.

4. Findings

The research results show that during research using teaching technology, experimental sessions were carried out with the aim of developing the methodological competence of religious teachers in teaching religious education and computer science as well as assessing the increase in students' interest in digital educational technology. During the training, two groups of students were formed - the experimental group (EG), where training was carried out using a competency-based teaching system developed using modern technologies, and the traditional group (TG), where traditional programming teaching methods were employed. Data processing from initial testing carried out at the start of the training process for both groups showed there were no statistically significant differences between the two groups. However, group assignments were carried out using traditional methods for one group, while modern teaching technology, including SAMR technology was applied for the experimental group. Further monitoring of the formation of theoretical knowledge and practical skills was carried out six times in both groups. Expert judgment was obtained, and statistical analysis of the results was performed.

The analysis of the results shows that there are systematic changes in the development of basic and professional competencies in the experimental group students, making it possible to formulate general conclusions. The criteria for assessing the effectiveness of the formation of competencies in the programming educational process are set as follows: 1) A significant increase in the average proportion of students' theoretical knowledge in programming, determined on the basis of electronic testing. 2) Significant increase in the average proportion of abilities to complete professionally oriented tasks in the field of programming. 3) Reliable growth in average indicators per group, indicating the quality of the final professional project. 4) Significant increase in the proportion of basic competencies, pedagogy and subjects formed. The reliability of the indicator growth is assessed using the L-page trend test. The final scores of the experimental (EG) and traditional (TG) groups were compared using a parametric test of differences, while the overall percentage of assimilation of the material, the degree of formation of practical skills and competencies were compared based on the 70% criterion. full assimilation model (Wang et al., 2019). Significant increase was noted for the experimental group (L_{EG}=934.5, L_{TG}=928), while such consistent increase was not observed in the traditional group (L_{EG}=855, L_{TG}=928). There is also a significant difference between the average proportions of EG and TG according to the learner criterion at the final point ($|t_{EG}|$ = 1.97, with t_{TG} = 1.67). Thus, the obtained data indicate that the indicator showing the degree of assimilation of theoretical knowledge by students in the experimental group was significantly exceeded. Figure 2 shows the average group proportions of theoretical knowledge acquisition by students in the basics of programming obtained through computer testing.

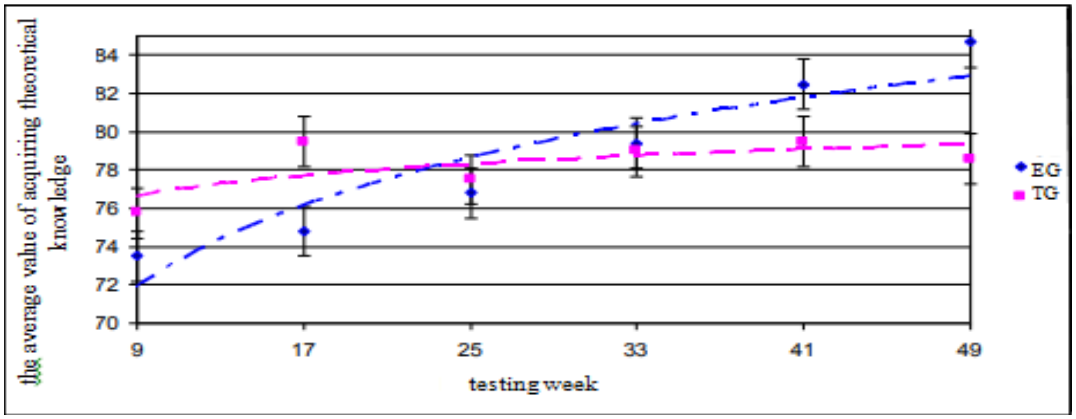

Figure 2. Contribution to the acquisition of theoretical knowledge by students.

In both EG and TG, the final values of the assimilation fraction exceed the critical value of 70%. Figure 2 presents the average group indicator of the proportion of skills formation in solving tasks aimed at competency in EG. These tasks are a feature of IT programming education, so the data for IT taught using traditional educational tasks are not shown on the graph.

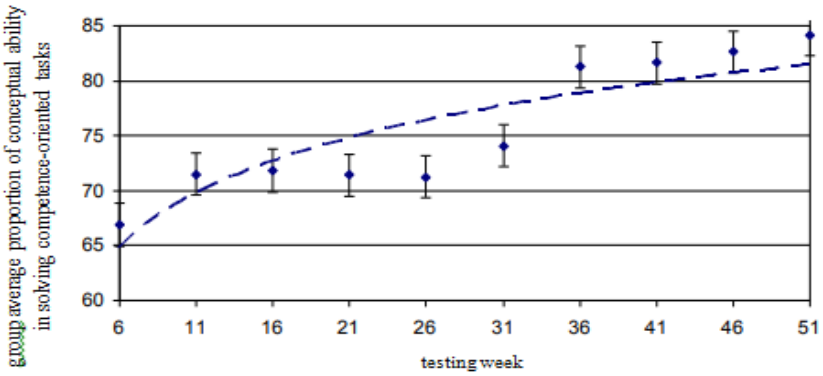

Figure 3. Mean development of skills in completing tasks related to competence in the group

Comparison of the data shows an increase in the reliability of the proportion of skills formation in solving tasks aimed at competency (L_{EG} = 969.5, L_{TG} = 928). In our study, we use V.P. Bespalko's methodology (Gnezdilov et al., 2020)to assess competency formation. From the experimental data, it is evident that the average proportion of skills formation in solving tasks aimed at competency significantly exceeds the critical threshold of 70% in the final period. We utilized recent professional projects to measure the contribution to competency enhancement. It has been empirically established that group projects on professional programming have the greatest impact on subject competency in programming, as well as basic and pedagogical (self-education, informational, communicative, research, and methodological) competencies. Within the subject competency in programming, we identified algorithmic and procedural competencies, which constitute the fundamental basis of the computer science teacher's competency. For each of them, indicators were selected, some of which are applicable to all algorithms (originality and speed of the algorithm, fault tolerance, ergonomics, modification, and task relevance), so they were combined into one overall indicator (Dwivedi et al., 2021). During the analysis of group professional projects, expert assessments, surveys, project defense analysis, project element analysis, etc., students developed four professional projects over the course of their studies. The average proportions of competency formation in programming are presented in the graph in the figure. There is a significant increase in all components of programming competence (Satisfying Page L-criterion, L_{EG}^{alg} = 359, L_{EG}^{prog} = 358, L_{TG} = 317 and L_{EG}^{prog} = 162.5, L_{CRT} = 153), and the final result is above the critical 70% exceeds. Here, L_{EG}^{alg} – algorithm of the EG, L_{EG}^{prog} -programming of the EG, L_{CRT} – creative group. Significantly less, but with a significant increase in basic and pedagogical indicators (according to the criteria L_{CRT}= 317, L_{EG}^{self}=326, L_{EG}^{inf}=340.5, L_{EG}^{com}=356, $L_{EG}^{Research}$=354.5, L_{EG}^{meth}=347) competences, formation results of measuring the share. Here are the same indicators L_{CRT} = 317 creativity, L_{EG}^{self} = 326 self-education, L_{EG}^{inf} = 340.5 informational, L_{EG}^{com} = 356 communicative, $L_{EG}^{Research}$ = 354.5 research, L_{EG}^{meth} = 347 methodological. The above criteria are the results of the survey (self-education, informational, communicative, research and methodical). The results of measuring the proportion of the layer are shown in the figure 4. The final group design was the same for the control and experimental groups, allowing us to compare the group's average contribution to competency development, as presented in Figure 4.

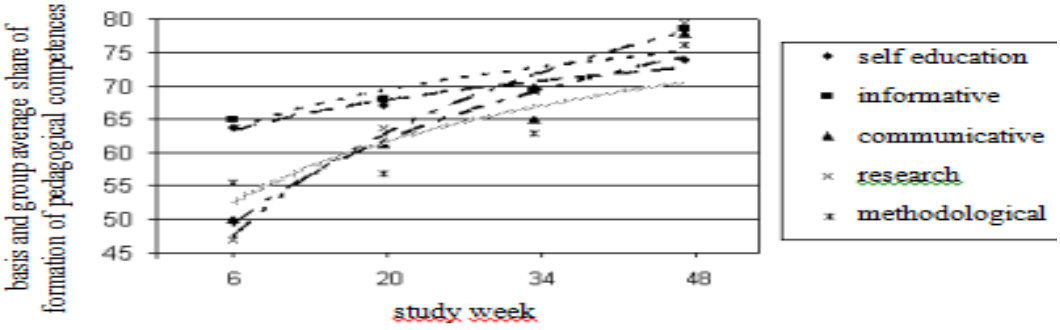

Figure 4. The level of competency attainment.

From Figure 4, a statistically significant difference in the proportion of competency formation (according to the t-test for learners) is evident in favor of the experimental group for eight out of nine competencies.

5. Discussion

The discussion regarding the influence of the digital revolution in Islamic religious education is an interesting and relevant topic in the context of elementary school education in today's modern developments. This finding is in line with previous research that technology helps students in learning religion (Lai et al., 2022; Muhtar et al., 2021; Latuconsina et al., 2023). In the era of information technology that continues to develop rapidly, the use of sophisticated digital resources can have a significant impact in improving the quality of education and the effectiveness of learning. In this context, it is important to analyze how digital educational resources can improve the methodological competence of educators, especially in computer science teaching. One important aspect that needs to be understood is how the use of digital technology can affect the overall educational process. In this case, the SAMR model (Substitution, Augmentation, Modification, Redefinition) plays an important role in forming educators' methodological competence. This model helps educators understand how technology can be used to enhance learning, not only as a substitute tool, but also as a tool to change and redefine the way learning is conducted.

Monitoring of student learning activities, study of educators' experiences, practical-experimental discussions, surveys, as well as analysis and evaluation of student work results were found. From the research findings, it can be concluded that digital educational resources have an important role in shaping the professional orientation of future computer educators. These results can be an added value in the professional training of prospective educators and improving their professional qualifications in higher education institutions. Apart from that, it is also important to pay attention to the relationship between students' self-efficacy and the quality of Islamic religious educators as murabbi. By using a representative sample, research results can have stronger generalization and provide a more comprehensive understanding of relationships. Recommendations for developing more diverse and holistic data collection methods are also something that needs to be considered in the context of this research. In the context of Islamic religious education, the potential for using digital technology to improve the quality of learning and teaching is very large. By understanding the important role of digital resources in shaping educators' methodological competence, we can design more innovative and effective learning approaches. Thus, the digital revolution of Islamic religious education can be one of the keys to improving the quality of education and preparing a generation that is able to adapt to the ever-changing contemporary world, this is in line with previous research (Imaniyati et al., 2024; González-pérez & Ramírez-montoya, 2022; Suyadi et al., 2022)

6. Conclusion

During this research, modern teaching technologies were applied with the aim of developing pedagogical competence among computer science teachers and assessing the increase in students' interest in digital educational technologies. Experimental sessions were conducted with two groups of experimental and traditional students, the analysis of which revealed systematic changes in the development of students' competencies in the experimental group. Although at the initial stage of the research, no statistically significant differences between the groups were identified, significant results were achieved during the education of students in the experimental group using modern techniques and digital educational resources. The effectiveness of education is analyzed based on several criteria, such as increasing the proportion of theoretical knowledge, developing skills in solving professionally oriented tasks, the quality of professional final projects, as well as the formation of basic, pedagogical and subject competencies. The research results confirm the importance of using digital educational resources in forming the methodological competence of future computer science teachers. These resources not only allow organizing an effective learning process but also create an innovative educational environment, stimulate students' interest in learning and develop their competencies for successful application in future professional activities. The main findings of

the study lead to the following conclusions: - Increase in the proportion of theoretical knowledge: students in the experimental group, who were taught using digital educational resources, showed a significant growth in knowledge compared to the traditional group. - Development of skills in solving professionally oriented tasks: education using modern techniques allows students to develop not only technical programming skills but also the ability to adapt to different situations, analyze and solve complex problems. - Quality of the final professional project: students in the experimental group showed higher quality and creativity in the implementation of the project due to the use of digital tools and technologies. - Formation of basic, pedagogical and subject competencies: research results show that education using digital educational resources contributes to the formation of more complete and in-depth competencies among future computer science teachers. The final results of the research confirm the importance of using digital educational resources in modern education, especially in the context of teaching computer science. The application of modern teaching methods, such as the SAMR (Substitution, Augmentation, Modification, Redefinition) model, not only effectively conveys knowledge but also actively involves students in the learning process, developing independent work skills, critical thinking and problem solving. ability. Overall, the study results confirm the importance of integrating digital technology into the educational process to improve the quality of education and develop competencies among students. This approach not only helps prepare future teachers for modern challenges and labor market needs, but also contributes to creating a more engaging, effective and accessible educational environment.

Limitation

In conducting research on the influence of the digital revolution in Islamic religious education, there are several limitations that need to be considered. First, the limited sample population may affect the generalization of research results. Although the sample used is quite large, it only represents a small portion of the wider population. This may limit the ability to generalize study findings across relevant populations. Second, limitations in data collection methods also need to be considered. The use of the main data collection instrument can cause respondent bias in providing answers, especially if there are questions that are ambiguous or can be interpreted differently. In addition, instruments can also limit in-depth understanding of the phenomenon under study, because they do not allow to explore the context in depth. In addition, limitations in data analysis also need to be taken into account. Even though data analysis was carried out using Statistical Package for Social Science (SPSS) software, there is still the possibility of errors in data processing and interpretation of analysis results. The use of inferential statistical analysis also has certain assumptions that need to be met to ensure the validity of the analysis results. The limitations of the variables studied also need to be considered. This research focuses on the relationship between students' self-efficacy and the quality of Islamic religious educators as murabbi. However, there are other variables that may also contribute to educator quality, such as school environmental factors, leadership support, or other individual characteristics that were not included in the analysis. Finally, time and resource limitations can also impact the depth of analysis and interpretation of research results. Time limitations experienced by researchers may limit their ability to conduct more in-depth research or explore additional aspects relevant to the context of this research. Apart from that, limited resources can also limit access to wider data or literature that could support this research more comprehensively. Taking these limitations into account, it will be important to design more holistic and comprehensive research in the future. By expanding the sample, considering more diverse data collection methods, and overcoming limitations in data analysis, future research can provide a deeper and more comprehensive understanding of the influence of the digital revolution on Islamic religious education.

Recommendation

Based on the findings of this research, there are several recommendations that can be given for the development and implementation of further research in the educational context. First, it is important to conduct more in-depth research involving a more representative sample of

the relevant population. By involving a larger and more representative sample, the research results will have stronger generalization and can provide a more comprehensive understanding of the relationship between student self-efficacy and the quality of Islamic religious educators as murabbi. Second, recommendations for developing more diverse and holistic data collection methods also need to be considered. In addition to using questionnaires, future research could consider using in-depth interviews or direct observations to gain a deeper understanding of students' and educators' perceptions and experiences regarding self-efficacy and teaching quality. In addition, it is important to expand the scope of variables studied in the relationship between self-efficacy and educator quality. Future research could consider additional factors such as social support, educators' intrinsic motivation, or school leadership characteristics that may also influence teaching quality. By including these additional variables in the analysis, it will provide a more comprehensive understanding of the factors that contribute to the quality of educators as murabbi. Finally, recommendations for developing training and professional development programs that can improve educators' self-efficacy and the quality of their teaching also need to be considered. This training program can focus on improving educators' pedagogical, managerial and social skills in the context of Islamic religious education. By involving various stakeholders such as educators, school principals, parents and the government, efforts to improve the quality of Islamic religious education can be carried out collaboratively to create an educational environment that supports the growth and development of educators and students.

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Conflict of Interest

The authors declare no conflict of interest in relation to this research project.

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