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Declaration of Generative AI Use

This study was prepared without any contribution from generative AI.

Concept Teaching in B1-Level Foreign Language Learning: A Mixed-Methods Study

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Abstract

In teaching Turkish as a foreign language, learners' ability to acquire concepts meaningfully and effectively, to establish relationships among concepts, and to concretize abstract notions is crucial to conceptual learning. At the B1 proficiency level, where abstract concepts become more prevalent, conceptual instruction needs to be systematically addressed to enable learners to use the target language effectively. However, studies in the field of teaching Turkish as a foreign language indicate that instructional materials and classroom practices predominantly focus on vocabulary teaching. Moreover, the absence of a comprehensive instructional model specifically designed for concept teaching negatively affects the quality of concept learning. Given this gap in the literature, the present study aims to examine the effect of the Holistic Concept Development Model (HCDM) on learners of Turkish as a foreign language's concept learning outcomes. The study was designed according to a mixed-methods research approach and conducted during the 2024–2025 academic year at the Gaziantep University Turkish Language Teaching Implementation and Research Centre, involving 34 volunteer students: 21 in the experimental group and 13 in the control group. In the experimental group, concepts were structured according to the stages of the HCDM and taught through activities utilizing concept-teaching tools and Web 2.0 tools. In contrast, instruction in the control group was conducted solely through textbook-based activities, without the use of concept-teaching tools or Web 2.0 applications. Overall, the findings suggest that HCDM strengthens the learning process and effectively supports meaningful concept learning in the teaching of Turkish as a foreign language.

Keywords: B1 level, concept teaching, holistic concept development model, reading skill, teaching Turkish as a foreign language

1. Introduction

Concept-based language teaching is one of the newest schools of foreign language teaching in this century. It treats language concepts as the basic unit of instruction and advocates that teachers directly teach students the "scientific concepts of language" in foreign language classrooms. By transforming conceptual meanings into concrete linguistic forms, students can combine scientific concepts with concrete applications (Tang & Wang, 2024).

Concept teaching, an important step in teaching, concerns how students learn and construct knowledge, the correct and incorrect constructions of concepts that occur in knowledge, and can be seen as the first step in teaching for meaningful learning to occur (Candan & Koçer, 2013). According to Özçelik (1988), concept development is a strong indicator of previous mental development and a prerequisite for subsequent mental development. The concepts a person acquires over a given period of time are the main product of their mental development. Therefore, concept learning is considered quite important.

Concept-based learning aims to help students gain greater awareness of and control over language tools and to become autonomous language users in the language-learning process (Lantolf, 2006). Concept teaching is an instructional approach that focuses on big ideas or generalizations that persist throughout a unit or lesson, rather than isolated facts (McTighe & Wiggins, 2013). At the heart of the difficulties encountered in concept teaching lies the inability to clearly define the concept's boundaries (Bahar, 2023). In teaching Turkish as a foreign language, the lack of clear conceptual boundaries can complicate comprehension and lead to misconceptions among students. Accordingly, it is anticipated that the concept teaching model developed in this study will contribute to addressing this issue.

The fact that studies on concept teaching in the relevant literature date back to earlier periods suggests that interest in the subject has been shown since early times. In this context, Klausmeier (1971, 1992) argued in his studies that concept teaching should progress gradually under teacher guidance and highlighted the importance of the teaching model in this process. Novak (1971, 1990), building on Ausubel's concept of meaningful learning, stated in his studies that concept maps and other tools are effective for meaningful learning and that concepts are structured differently across disciplines. Williams (1971) presented a concept-learning model for concept teaching and emphasized the importance of repetition, association, and organization processes in concept learning.

Concepts are the intermediary elements used when transitioning from concrete to abstract subjects. Concept learning plays a significant role in learning, especially in understanding and interpreting abstract concepts. This is because concepts are the keys to unlocking themes, and students can only grasp a subject to the extent that they understand its concepts (Kırkkılıç & Girgin, 2018).

Although there is no direct definition of concept learning and teaching within reading comprehension skills in teaching Turkish to foreigners, the Turkish as a Foreign Language Teaching Program (Türkiye Maarif Vakfı, 2020) includes the following learning outcomes related to concepts: A1.O.4. "Recognizes concepts and idiomatic expressions related to weather.", B1.Y.45 "Writes texts using words belonging to the same conceptual field.", B2.O.42. "Identifies terms, abbreviations, concepts, and information presented with elements such as graphs, tables, and diagrams.", B2.Y.36. "Writes texts using words belonging to the same conceptual field.", C1.Y.26. "Writes texts using words belonging to the same conceptual field." In addition to the communication forms called reception, production, and interaction, which are included in the Common European Framework of Reference for Languages (Ministry of National Education [MoNE], 2021), the table titled "Leading Group Work" under the heading "Mediating Concepts" includes the following learning outcomes for B1 level: "Ask appropriate questions to check whether the explained concepts are understood," and for B2 level: "Encourage individuals in a group to build upon and develop each other's knowledge and ideas to find a concept or solution." Furthermore, under the heading "Strategies for Explaining a New Concept," within the mediation strategies, in the "Adapting Language" category, for B1 level: "Explain the main points in short and uncomplicated texts on familiar topics in a simpler way so that the content is accessible to others," and for B2 level, under the "Relating to Existing Knowledge" category: "Explain a new concept or procedure by comparing it to a concept that people are familiar with." The text includes statements about concept learning, mediation activities and strategies, and achievements (MoNE,

2021). Explaining learned concepts with known concepts is an important aspect of concept teaching. In the mediation category, "Strategies for explaining a new concept" emphasizes the ability to connect new concepts with prior materials and background knowledge, to connect with other texts, and to compare and connect new and prior information. In the language adaptation section, it is mentioned that methods such as synonyms, analogies, simplification, and elaboration can be used (Council of Europe, 2020; MoNE, 2021). Therefore, in foreign language teaching, tools that utilize synonyms, metaphors, and associations to facilitate meaningful concept learning can make the learning process more efficient. For this reason, concept maps, concept networks, fishbone diagrams, and semantic analysis tables are alternative group-teaching techniques for concept instruction in Turkish as a foreign language. Venn diagram activities, such as associating concepts and ideas, visualizing information, identifying main and sub-causes, and establishing connections by listing the characteristics of entities and objects, are carried out using tools such as mind maps (Şahin & Kemiksiz, 2018). Creating a conceptual space around the words students already use in daily life allows them to learn the target language meaningfully. This process is particularly important at the B1 level, where abstract concepts predominate and international students learning Turkish as a foreign language must relate new concepts to previously acquired ones for lasting learning to occur. With this aim, the researchers designed the Holistic Concept Development Model (HCDM), which integrates diverse concept-teaching techniques with Web 2.0 tools to support multifaceted learning in the classroom. The model teaches concepts meaningfully by moving from the concrete to the abstract, remains applicable in classroom settings, addresses individual differences, and employs weekly self-assessments aligned with its instructional steps.

The HCDM engages all six cognitive process categories of Bloom's Revised Taxonomy. It activates *remember* by connecting prior learning to new concepts and *understand* by presenting concepts in varied contexts through positive and negative examples. It fosters *apply* through the pairing of exemplary and non-exemplary characteristics, and it develops *analyze*, *evaluate*, and *create* as learners use concepts in context, generate original examples, and refine them through feedback. The model likewise addresses four knowledge dimensions: factual knowledge through the concept's name, definition, and concrete identification; conceptual knowledge through its distinguishing exemplary and non-exemplary features; procedural knowledge through learner-produced re-exemplification in their own words; and metacognitive knowledge through evaluation and feedback.

The HCDM draws on established concept-teaching approaches, including the Merrill-Tennyson Concept Acquisition Strategy, Martorella's Concept Analysis, Joyce and Weil's Concept Acquisition Strategy, Michaelis and Garcia's Concept Teaching Strategy, Klausmeier's Concept Formation Model, Gagné's Concept Teaching Model, and the De Cecco Model. By synthesizing these into a single framework tailored to teaching Turkish to foreigners, the model offers a comprehensive approach expected to facilitate classroom implementation.

In teaching Turkish to foreigners, meaningful learning is crucial for achieving lasting learning. Considering the teaching materials for Turkish for foreigners, it is observed that as students progress from the A1-A2 level to the B1 level, the number of abstract concepts increases in line with expanding vocabulary. This requires learners to understand not only the words themselves but also the concepts they represent. However, a review of the literature reveals that studies on teaching Turkish as a foreign language heavily focus on vocabulary teaching, word

knowledge, and vocabulary, as seen in the works of Büyükikiz (2014), Demir et al. (2021), Demir et al. (2022), Ercan (2014), Erol (2021), Maden (2020), and Maden and Önal (2021). However, an examination of these studies reveals that only a limited number focus on concept learning and teaching (Bülbül, 2015a; Gerek, 2022; Zorpuzan, 2019). Furthermore, the lack of a model that allows learners to structure concepts encountered both inside and outside the classroom according to their individual learning situations, to conceptualize Turkish concepts, and to reinforce this conceptualization through various concept-teaching tools highlights the need for research on concept teaching.

This research aims to examine the effect of the HCDM, developed to address the limited research on concept learning situations and the lack of a holistic model for teaching concepts in the target language in Turkish language instruction for foreigners, on concept learning among B1-level students, focusing on permanent and meaningful concept learning, Turkish learning situations, and the model's applicability in the classroom. To this end, the following questions were addressed.

- According to HCDM, is there a significant difference between the pre- and post-test scores of the experimental group that received the instruction?
- Is there a significant difference between the pre- and post-test scores of the control group?
- Is there a significant difference in the final test scores between the experimental and control groups?

The qualitative component of the study aimed to explore learners' views on the HCDM and the implementation process, as well as to evaluate the implementation process based on the external observer's assessments.

2. Methodology

2.1. Research Design

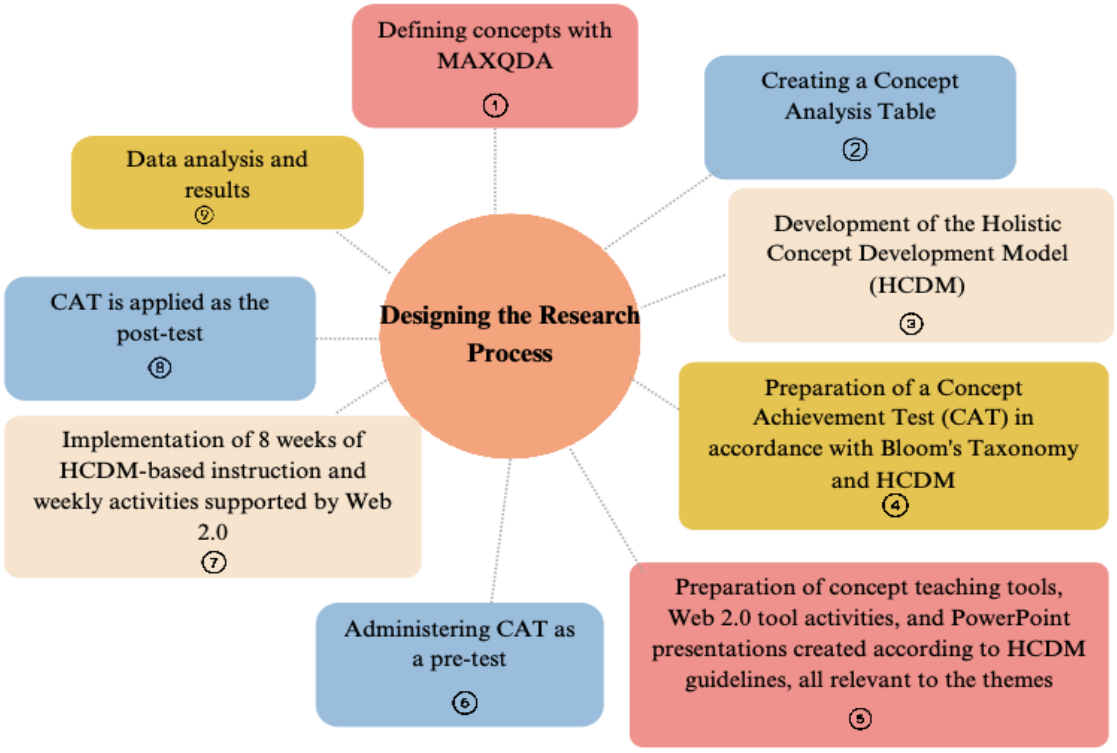
This research used an embedded mixed-methods design that combined qualitative and quantitative methods. The embedded mixed-methods strategy involves a single data-collection phase in which both quantitative and qualitative data are collected simultaneously. The embedded approach has a primary method that guides the project and a secondary dataset that supports the procedures. When given less priority, the secondary method is embedded or nested within the dominant method (Creswell, 2014). One variation of the embedded design, among many, is the experimental model. The embedded experimental model is defined as the integration of qualitative data into an experimental design (such as a true experimental or quasi-experimental design). The priority of this model is determined by the quantitative, experimental method, and the qualitative dataset is in a secondary (subordinate) position within this method (Sandelowski, 1996; cited in Creswell and Plano Clark, 2011). In this research, an embedded experimental design was used because quantitative methods predominated, with qualitative methods playing a secondary, supporting role to the quantitative data.

Mixed methods is a research approach that involves using different research designs, incorporating philosophical assumptions and theoretical frameworks, collecting qualitative and quantitative data, and integrating these two data types. Therefore, using both qualitative and quantitative approaches together, rather than just one, allows for a more comprehensive understanding of the research problem. Mixed methods research is a class of research that combines

quantitative and qualitative techniques, methods, approaches, or concepts in a single study (Creswell, 2017). Mixed methods research is concerned with increasing knowledge and validity. The design as a product must be of sufficient quality to achieve multiple validity and legitimacy; this means that the mixed methods research study must meet the relevant combination or set of quantitative, qualitative, and mixed methods validity in each research study (Johnson & Christensen, 2017; Onwuegbuzie & Johnson, 2006; Schoonenboom and Johnson, 2017). Therefore, a mixed-methods approach was preferred for the research. The aim of mixed methods research is to use 'Triangulation' to converge results, 'Complementarity' to enrich results, 'Initiation' to discover contradictions, 'Development' to inform other studies with the findings of the method, and 'Expansion' to broaden the scope of the research (Johnson & Onwuegbuzie, 2004).

The qualitative part of the research utilized an action research design. Action research is a type of research conducted to find solutions to problems in education and to improve practice, requiring practitioners to examine their own practices to address these problems (Başarır, 2019). Action research, also known as learning by doing, is the art of changing conditions through the praxis paradigm (O'Brien, 2001). In accordance with the praxis paradigm, the research was structured around Kemmis and McTaggart's (2014) action plan cycle (plan, action, observation, reflection, replan), and weekly actions were reshaped based on expert and observer feedback at the replan stage. While a positivist approach was adopted in the quantitative part of the research, a pragmatic understanding, consistent with the nature of action research, was adopted in the qualitative part. The flowchart for designing the research process, which combines qualitative and quantitative methods, is shown in Figure 1. It must be stated whether the research is quantitative, qualitative, or mixed-methods; the model/design employed must be justified. The suitability of the design for the research problem must be explained.

Figure 1. Designing The Research Process



The first step in the design process was identifying the concepts. After the concepts were determined using MAXQDA, they were included in the Concept Analysis Table (CAT) in line with the researchers' shared opinions. Within the CAT, after reviewing the concepts in the material and deciding whether to incorporate them into the activities, the HCDM was developed. The model, which accounted for factors such as the classroom environment and students' individual differences, was effective in creating the CAT alongside Bloom's Taxonomy. Subsequently, presentations and activities to be implemented throughout the process were prepared, and the CAT was administered as a pre-test in the first week of the research. All activities prepared during the eight weeks were implemented in accordance with the HCDM. In the last week of the research, the CAT was administered as a post-test, and after analyzing the collected data, the research results were obtained.

2.2. Participants

The experimental and control groups of the study consisted of 34 students who were learning Turkish at the Gaziantep University TÖMER B1 level, continuing their Turkish language education under the coordination of the Presidency for Turks Abroad and Related Communities (YTB), and who voluntarily participated in the research. The experimental group consisted of 21 students, and the control group consisted of 13. In accordance with the research objective of being conducted with international students learning Turkish at the institution where the researcher works, convenience sampling, a type of purposive sampling, was used. Purposive sampling is a widely used technique for identifying and selecting information-rich situations to utilize limited resources as efficiently as possible (Patton, 2002).

2.3. Data Collection Instruments

The study used a Personal Information Form with sixteen questions to collect demographic data; a CAT structured around cognitive and metacognitive skills and HCDM steps; a form with 20 open-ended items to gather student opinions on the subject, shaped by the researchers' consensus and the opinions of three field experts; and an 18-item observer form to collect the observer's weekly views and suggestions. The CAT, administered to both the experimental and control groups at the beginning and end of the study, included multiple-choice, fill-in-the-blank, matching, true/false, and explicit example questions. The questions were classified according to the systematic process steps in the revised Bloom's Taxonomy and its dimensions of knowledge: factual, intelligible, procedural, and metacognitive (Anderson & Krathwohl, 2001). The stages of remembering, understanding, applying, analyzing, evaluating, and creating, which are included in CAT and correspond to Anderson and Krathwohl's revised version of Bloom's taxonomy, are significant in that they enable learning outcomes to be articulated according to specific cognitive processes (Ulutaş & Kara, 2019). In addition, a success form was developed to support and reinforce concept teaching, taking into account the following stages of the HCDM: Definition/Explanation, Concrete Level, Explanation of the Predicted Concept, Distinguishing Feature of the Concept, Non-Distinguishing Feature of the Concept, Examples of the Concept, Non-Examples of the Concept, Testing, Formal Level, and Feedback.

After the development of the data collection instruments, their validity and reliability were also examined. Validity, which concerns the extent to which findings are accurate from the researcher's, participant's, or reader's perspective, is one of the strongest aspects of qualitative research (Creswell & Miller, 2000; cited in Creswell, 2017). The validity of action research depends on whether the solution produced to a problem actually solves it (Mills, 2003). The reliability of a study refers to the researcher's ability to account for complexities that arise in a study and to address patterns that are not easily explained (Guba, 1981). Multiple strategies should be proposed to verify the accuracy of findings in a proposal or study. Triangulation, participant verification, comprehensive description, revealing researcher bias, presenting negative or contradictory information, prolonged fieldwork, peer review, and the use of independent auditors are all methods of verifying the accuracy of findings (Creswell, 2017). This research utilized both qualitative and quantitative data.

- In this study, triangulation, or diversification, was used to draw on different data sources, such as observations, interviews, and the researcher's journals.
- The researcher actively participated in student activities for eight weeks, conducted ongoing observations, and spent an extended period in the field.
- A weekly status assessment was conducted regarding the practices carried out through peer review.
- Archival data were collected through photographs, audio recordings, documents, and weekly operations.
- Throughout the research, an observer attended the classes, and a permission form was maintained to monitor the proceedings.
- The researcher used a weekly researcher's journal to reflect on the practices.
- Sharing the research findings with the consultant at regular intervals, the consultant's guidance in concept identification as an expert familiar with the literature, their opinions on planned

activities, and their feedback on data analysis all contributed to the research's validity and reliability.

2.4. Data Collection Procedure

The research was structured according to Kemmis and McTaggart's (2014) action research cycle (plan, action, observation, reflection, replan), and weekly actions were revised during the data collection phase based on expert and observer feedback at the replan step. Table 1 presents the action plan for data collection.

Table 1. Action Plan for the Data Collection Process

Imp.	Plan	Act	Observe
1	Preliminary information about the implementation (06.01.2025)	Unit PPT presentation, HCDM implementation, student products, personal information form, pre-test	Pre-test, external observer form, researcher's journal, photographs
2	Choosing a tool (Concept Map, Canva, Padlet, etc.) and creating a lesson plan.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs
3	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs
4	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs, audio recording
5	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs, audio recording
6	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs, audio recording
7	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, student products	External observer form, researcher's journal, photographs, audio recording
8	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs, audio recording
9	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs, audio recording
10	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	External observer form, researcher's journal, photographs, audio recording
11	Choosing tools, creating lesson plans.	Unit PPT presentation, HCDM implementation, and student products.	Post-test, external observer form, researcher's journal, photographs, audio recording

Table 1 presents the action plan implemented in the study. The table illustrates the planning, action, and observation stages of the research process. During the reflection stage, the external observer was formed, and the students' artifacts were analyzed. During the replanning stage, a

weekly action plan was developed in light of expert opinion, students' prior knowledge, and student evaluations. The activities were planned according to the weekly units covered in the course materials used at the institution where the researcher conducted the study. They were organized according to the weekly class hours and schedule. Accordingly, the activities were carried out over 8 weeks, including the administration of pre- and post-tests and the use of open-ended questions. Before starting the implementation, students were informed about the study and its purpose, timing, and method. It was emphasized that participation in the study would be voluntary, and students were given a voluntary participation form and a Personal Information Form to collect their personal information, followed by a 20-question pre-test. The 8-week implementation ended on Wednesday, March 5th, and the post-test and interview forms were administered to the students the following week (March 7th). The post-test was distributed to the students in the first lesson. In the second lesson, students were given forms to express their opinions on the concept-learning process, which covered eleven units over eight weeks and was prepared in accordance with the HCDM steps, using concept-teaching tools, Web 2.0 tools, and various argumentative methods. The implementation process of the action plan is illustrated in Figure 2.

Figure 2. Action Plan Implementation Process

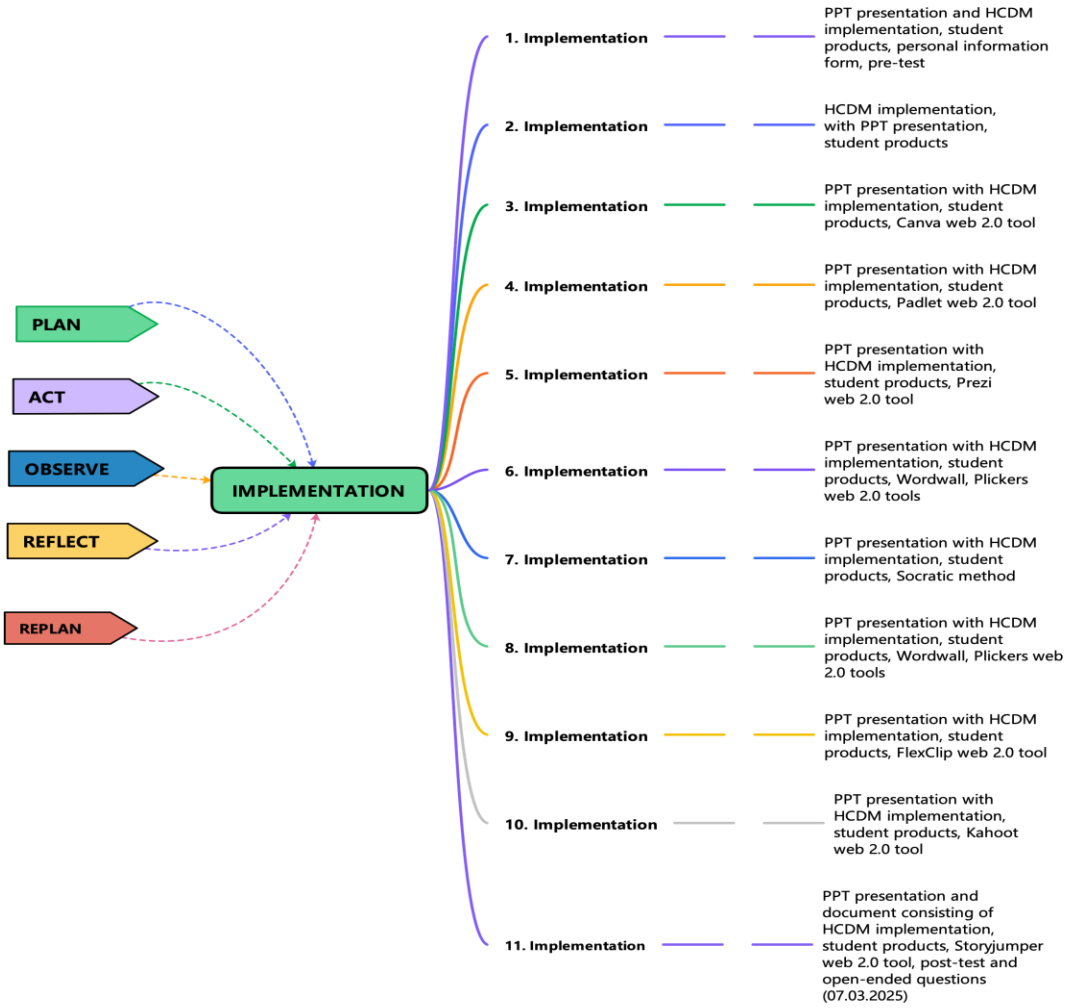


Figure 2 presents the action plans for 11 implementations carried out over eight weeks during the action research process. All implementations used concept-teaching tools and Web 2.0 tools based on the HCDM framework. After each activity, student products containing reinforcement questions aligned with the HCDM steps were used. The eight-week process was structured around the plan-action-observation-reflection-replan steps. Planning and projection were modified and enriched through various activities in line with the opinions of experts and external observers, as well as the students' wishes. The process plan was restructured the following week again using the same steps.

2.5. Data Analysis

2.5.1. Analysis of Quantitative Data

In this study, a CAT was developed by the researchers and reviewed by three field experts, based on a consensus to address the question, "How did instruction using HCDM affect students' concept learning success in the experimental group?" The CAT, consisting of 20 questions covering eleven units and designed to assess cognitive levels and metacognitive skills, was administered as a pre-test to both the experimental and control groups in the first week. Following this, the CAT was administered again as a post-test to both groups, and the data were analyzed using the Statistical Package for the Social Sciences (SPSS 30).

To assess whether there was a significant difference between the pre-test and post-test results of the students in the experimental group, the Shapiro-Wilk normality test was applied first. The results of the Shapiro-Wilk analysis are shown in Table 2.

Table 2. Shapiro-Wilk Test Results Regarding the Distribution of Pre-Test and Post-Test Scores of Students in the Experimental Group

Test	Shapiro-Wilk statistic	Sd (df)	Significance (p)
Pre-test	.932	21	.150
Post-test	.971	21	.763

Table 2 shows that the pre-test results = .932, p = .150 (p > .05) and post-test results = .971, p = .763 (p > .05) indicate a normal distribution. Table 3 presents the results of the normality test for the control group's pre-test and post-test scores.

Table 3. Shapiro-Wilk Test Results Regarding the Distribution of Pre-Test and Post-Test Scores of Students in the Control Group

Test	Shapiro-Wilk statistic	Sd (df)	Significance (p)
Pre-test	.941	13	.474
Post-test	.967	13	.863

Table 3 shows that the Shapiro-Wilk scores were .941 (p = .474) for the pre-test and .967 (p = .863) for the post-test. Since the p-values were > 0.05 in both tests, the data were found to follow a normal distribution.

To answer the question, "What difference was observed between the final test scores of the experimental group, which was taught using the HCDM method, and the final test scores of the control group, which was taught using the traditional method?", a comparison was made of the results of the CAT, which was administered as a final test to both groups at the end of eight weeks. For this purpose, the Shapiro-Wilk test results are shown in Table 4 to determine whether the groups exhibit normal distributions. Table 4 presents the Shapiro-Wilk normality test results for the post-test scores of the experimental group instructed with HCDM and the control group instructed with traditional methods.

Table 4. Shapiro-Wilk Test Results Regarding the Distribution of Post-Test Scores of the Experimental Group Instructed with HCDM and the Control Group Instructed with Traditional Methods

Group	N	Shapiro-Wilk statistic	Significance (p)
Experimental group (Post-test)	21	.971	.763
Control group (Post-test)	13	.967	.863

According to Table 4, both the experimental and control groups showed a normal distribution of their final test scores ($p > 0.05$). Therefore, it was deemed appropriate to use the independent samples t-test, a parametric test, to compare the final test results of the control group. Subsequently, Levene's Test was applied to determine whether the group variances were equal. Levene's test indicated unequal variances ($p < 0.037$). Therefore, both the Welch t-test and the difference between the final test scores were evaluated by considering the 'equal variances not assumed' row of the independent-samples t-test in the intergroup comparison analysis.

2.5.2. Analysis of Qualitative Data

In this study, inductive content analysis was used to examine student forms with open-ended questions. Content analysis generally refers to analyzing text (interview transcripts, diaries, or documents) rather than observation-based field notes. More broadly, it encompasses any qualitative data reduction and meaning-making effort that seeks to identify core consistencies and meanings from a volume of qualitative material (Patton, 2015).

In this study, data from open-ended question documents prepared for students were first carefully examined and then coded. In the next stage, the codes were categorized, and themes were created. Findings were derived by organizing the codes and themes in relation to the collected data. The data analysis process was carried out using a collaborative, consensus-based coding method developed by the researcher and two field experts (Guest and MacQueen, 2008; cited in Saldaña, 2009). The researcher shared the research objectives, data collection procedures, and coding guidelines with the experts before the process began. In the first stage, experts and the researcher created the initial codes through pre-coding (Saldaña, 2009). In the next stage, intensive group discussions were held between the researcher and experts regarding the codes and meaning categories, and group consensus was reached by evaluating different perspectives on points of disagreement (Harry et al., 2005; cited in Saldaña, 2009). Then, the focused coding stage was entered, during which the codes were re-examined, combined where necessary, themes were developed, and the final analysis structure was created (Saldaña, 2009). The external observer form

consisted of 18 items designed to elicit the observer's thoughts and suggestions, with a Likert-type scoring system offering options of "Strongly Disagree," "Disagree," "Undecided," "Agree," and "Strongly Agree." Both content and descriptive analyses were performed on the observer form to reach the findings. In this study, a quantitative inter-coder reliability coefficient was not calculated; instead, a "difficult discussion and consensus-based coding" method was preferred.

2.6. Publication Ethics

This study was approved by the Social and Human Sciences Research and Publication Ethics Committee, Erciyes University (Approval No: 53, Date: 27.02.2024). Ethical approval was initially obtained from the relevant institutional Ethics Committee on February 27, 2024. The implementation, originally scheduled for the 2024 academic year, was postponed due to a lack of eligible participants at the required B1 proficiency level. Following a formal request submitted on December 9, 2024, the Ethics Committee granted an extension on December 17, 2024 (with official documentation finalized and signed on February 27, 2024). This extension permitted the research to be conducted with a group of learners with similar characteristics (B1 level) at the same institution during the spring semester of the 2024-2025 academic year. Consequently, after participant enrollment, data collection commenced on January 6, 2025, and was completed on March 7, 2025.

3. Findings

This section presents interpretations of findings from data collected using various tools to measure the impact of HCDM on concept-learning situations.

3.1. Findings from Quantitative Data

Findings Regarding the Pre-Test and Post-Test Results of Students in the Experimental Group Where Instruction Was Conducted with HCDM

In the experimental group, the extent to which HCDM instruction affected students' concept learning success was assessed by administering the CAT as a pre-test and post-test during the first week of implementation (06.01.2025) and the eighth week (07.03.2025), when implementation ended.

A dependent-samples t-test was used to determine whether there was a significant difference between the pre-test and post-test scores of the experimental group, given that both scores were normally distributed. The results of the dependent-samples t-test are shown in Table 5.

Table 5. Results of the Dependent t-Test Regarding the Difference Between Pre-Test and Post-Test Scores of Students in the Experimental Group

Test	N	$\bar{X}$	Ss	t	Sd	p
Pre-Test	21	46.29	13.34	-11.489	20	.001
Post-Test	21	80.29	10.12			

In Table 5, a dependent-samples t-test was conducted to determine whether there was a difference between the pre-test and post-test scores of the students in the experimental group before and after implementation. According to the analysis results, a statistically significant difference was found between the pre-test ($\bar{X}$ = 46.29, Ss = 13.34) and post-test ($\bar{X}$ = 80.29, Ss = 10.12) scores;

t(20) = -11.489, p < .001. According to the findings, the concept-teaching tools and their implementations prepared according to the HCDM steps significantly increased the students' concept learning success rates in the experimental group.

Findings Regarding Students' Pre-Test and Post-Test Results in the Control Group Where Instruction was Conducted Using the Traditional Lecture Method

To answer the question, "How did the traditional (currently used lecture) teaching method affect the students' concept learning success in the control group?", the CAT was administered to the control group students as a pre-test and post-test during the first week of classes (January 7, 2025) and the eighth week (March 6, 2025), when the B1 level ended. No activities or implementations aimed at concept teaching were conducted in the control group for 8 weeks; classes continued as in previous weeks. To analyze whether there was a significant difference between the pre-test and post-test scores of the control group participants, a dependent-samples t-test, a parametric test, was deemed appropriate. Table 6 presents the results of the dependent t-test examining the difference between pre-test and post-test scores of students in the control group.

Table 6. Results of the Dependent t-Test Regarding the Difference Between Pre-Test and Post-Test Scores of Students in the Control Group

Test	N	$\bar{X}$	Ss	t	Sd	p
Pre-Test	13	37.77	12.879	-2.006	12	.068
Post-Test	13	47.46	15.914			

Table 6 shows that the mean pre-test score for students in the control group was 37.77, while the mean post-test score was 47.46. The dependent-samples t-test yielded a t-value of -2.006 and a p-value of .068. According to these results, there is no statistically significant difference between the pre-test and post-test scores ($p > 0.05$). This indicates that the course taught using traditional methods did not produce a significant change in students' conceptual learning.

Findings Regarding the Post-Test Scores of the Experimental Group, which Received Instruction with HCDM, and the Post-Test Scores of the Control Group, which Received Instruction with Traditional Methods

To answer the question, "What difference was observed between the final test scores of the experimental group, which was taught using the HCDM method, and the final test scores of the control group, which was taught using the traditional method?", a comparison was made of the CAT results, which were administered as a final test to both groups at the end of eight weeks. Table 7 presents the results of the independent-samples t-test examining the distribution of post-test scores between the experimental group instructed with HCDM and the control group instructed with traditional methods.

Table 7. Independent Samples t-Test Result Regarding the Distribution of Post-Test Scores of the Experimental Group, which was instructed with HCDM, and the Control Group, which was instructed with Traditional Methods.

Group	N	$\bar{X}$	Ss	t (SD)	p	95 % CI (Falk)
Experiment group	21	80.29	10.115	6.651 (SD= 18.074)	< .001	[22.459, 43.189]
Control group	13	47.46	15.914			

Table 7 shows a significant difference between the final test scores of both groups (t [6.651= 18.074, p < .001). This reflects the effect of the eight-week implementation of concept-teaching tools in the experimental group, where instruction was delivered using HCDM. The final test scores of the students in the experimental group (mean = 80.29) were significantly higher than those of the students in the control group (mean = 47.46). The mean difference was 32.82, and the 95% confidence interval indicates that the difference between the groups is statistically significant. Table 8 presents the results of the Welch t-test comparing the distributions of final test scores between the experimental group instructed using HCDM and the control group instructed using traditional methods.

Table 8. Welch t-Test Results Regarding the Distribution of Final Test Scores of the Experimental Group, Which Received Instruction with HCDM, and the Control Group, Which Received Instruction with Traditional Methods.

Test	F Value	df 1	df 2	p
Welch	44.240	1	18.074	< .001

In Table 8, due to the non-homogeneity of variance between the groups, the Welch t-test, conducted in parallel with the Independent Samples t-test, also revealed a result supporting the existence of a significant difference between the experimental and control groups in terms of post-test scores. Accordingly, the analysis results (F [1, 18.074 = 44.240], p < .001) indicated a significant difference between the post-test scores of the experimental and control groups, with both groups showing normal distributions.

3.2. Findings from Qualitative Data

In the study, the experimental group underwent an 8-week intervention, and in the final week, on Friday, March 7, 2025, an open-ended questionnaire was administered. The data obtained from the form were coded and categorized into themes using content analysis; the codes and themes were then organized, and finally, the findings were interpreted. Table 9 reports the findings for the concept-teaching category from previous weeks.

Table 9. Findings Regarding the Concept Teaching Category from Previous Weeks

Category	Code	Participant
Whether any concept teaching activities were conducted in previous weeks.	The event was held/given.	P2, P3, P13, P14, P21
	The event did not take place.	P1, P4, P6, P7, P8, P9, P10, P11, P12, P15, P17, P18, P19, P20

In Table 9, the first open-ended question was, “Was an activity conducted in previous weeks to teach concepts? If yes, what kind of activity was conducted?” Based on this question, a category titled “Activities Conducted in Previous Weeks for Teaching Concepts” was created. In this category, two main codes were determined: “Activity was conducted” and “Activity was not conducted,” and participant responses were categorized accordingly. Under the “Activity was conducted” code, some students answered by referring to the activity process, using the phrase “previous weeks.” Students 2, 3, 13, 14, and 21 indicated that activities related to the first question were conducted. Student 2 stated, “Yes, the teacher conducted speaking and concept practice at the B1 level,” indicating the activities the teacher used to teach concepts at that level. Similarly, Student

13 stated, "Yes. We used concept maps, Canva, and information maps to organize them in a colorful and eye-catching way," and Student 14 stated, "Yes, we used concept maps related to the meanings of the concepts." Students 3 and 14 indicated in their statements that activities were carried out for the research. Students 3 and 14 stated that the teacher assigned activities and homework, indicating that the activities were carried out, but they did not mention any specific activities or how they were implemented.

Students 1, 4, 5, 6, 7, 8, 9, 10, 11, 12, 15, 16, 17, 18, 19, and 20, referring to the A1-A2 level, indicated that no activities were conducted in the previous weeks. They also noted the teacher's activities during implementation at the B1 level. Student 7 reported that an activity related to the concept of art was performed; Student 8 mentioned that writing, reading, listening, and speaking activities related to the concept were provided; Student 12 stated that the teacher explained the meanings of the concepts using concept maps and example concepts, supplemented with visuals, example videos, and real-life examples for each concept, which they believed facilitated learning and was impactful. Students 11, 16, and 20 referred to the question-and-answer method; Student 19 mentioned the film implementation; and Students 11 and 16 discussed the use of the board. They also highlighted activities specifically involving the implementation of projections. Table 10 presents the findings regarding concepts learned at the B1 level and the factors that facilitated their recall.

Table 10. Findings Related to The Category of Concepts Learned at the B1 Level and Factors That Facilitate the Recall of These Concepts

Category	Code	Participant
Concepts learned	Holiday, fashion, brand, art	P1, P8, P11, P12, P15, P18, P21
	Invention, inventor, technology	P1, P8, P11, P12, P16, P17
	Work, profession, education	P3, P4, P6, P7, P8, P12, P15, P16, P17, P19, P21
	Belief, superstition, mythology	P11, P18, P19
Factors that facilitate recalling learned concepts	Learning through methods and tools	P1
	Learning through activities	P2, P4, P11, P18
	Learning through note-taking	P9, P16, P17, P19
	Learning through units	P5
	Learning through repetition and review	P14
	Learning through writing and listening.	P10
	Learning with visual and digital support	P13, P20

According to Table 10, in the second question of the study, students were asked which concepts they learned in B1 and what helped them remember these concepts. Accordingly, the categories "Learned Concepts" and "Factors Facilitating the Recall of Learned Concepts" were created. A total of 11 coding were made under the two categories.

Students 1, 8, 11, 12, 15, 18, and 21 mentioned the concepts of holiday, fashion, brand, and art, while students 1, 8, 11, 12, 16, and 17 referred to the concepts of invention, inventor, and technology. Student 1 stated, "I learned many concepts in B1. For example, fashion, art, holiday, invention, inventor, and others. Because the methods and tools used were very interesting," emphasizing that the teacher's methods and implementations contributed to concept learning and retention. Students 2, 4, 11, and 18 emphasized that the activities carried out during the lessons

supported concept learning and facilitated remembering the concepts learned. Students also identified different factors that made concepts easier to remember, including note-taking (Students 9, 16, 17, and 19) active participation in the lesson (Student 16 and 17), watching films (Student 19), repetition and review (Student 14), writing and listening (Student 10), and the use of digital and virtual tools and visual mapping (Students 13 and 20). In addition, students 3, 6, 8, 12, 15, and 21 indicated the concepts they learned in thematic terms. Student 6 mentioned the conceptual areas of daily life, memories, and the emotional world, emphasizing that these areas made it easier for them to remember the concepts. Student 5 stated that the concepts they learned, depending on the unit topic, increased their awareness and supported their personal development.

Table 11. Findings Related to the Category of Concepts That Are Easy and Difficult to Learn, and The Reasons for Their Ease or Difficulty in Learning

Category	Code	Participant
Difficulty/ease in concept learning	Easy Concept Learning	P1, P18, P19
	Concepts related to language skills	P6, P9, P10, P14, P20
	Concepts related to everyday life	P13, P14
	The concept of art	P12
	The concept of sport	P3, P5, P16, P17
	The concept of work/profession	P3, P4, P7, P8, P12, P16
	The concept of cinema	P5, P15
	The concept of wish	P2, P11
	The concept of fashion	P3, P11, P21
	The concept of holiday	P11, P12
	The concept of education	P16, P17
	The concepts of invention and inventor.	P12, P15, P16
The reason why the concept is difficult or easy to learn	The use of different teaching tools	P18
	Interest and follow-up	P5, P7
	Fast speaking of the target language.	P9
	The concept is abstract.	P12
	Lack of practice	P14
	The concept is related to everyday life.	P12, P13, P14

In Table 11, another question in the study identified the categories “Difficulty or Ease in Concept Learning” and “Reasons for the Difficulty or Ease of Learning a Concept.” Accordingly, for the first category, a total of twelve codes were determined: “Ease of learning the concept, Concepts related to language skills, Concepts related to daily life, Art concept, Sports concept, Work/profession concept, Cinema concept, Wish concept, Fashion concept, Holiday concept, Education concept, Invention-inventor concepts”; for the second category, “Use of different teaching tools, Interest and follow-up”, The following codes were created: “Fast speaking of the target language, Abstract nature of the concept, Lack of practice, Relevance of the concept to daily life.”

Students 1 and 18 stated that the concepts were easy, and Student 19 reported learning them easily. Students 6, 9, 10, 14, and 20 answered the question by relating the difficulty and ease of the concepts to those of the learning areas. Student 6 emphasized difficulties with reading (9), listening (10), speaking (14), and grammar (20). Students 13 and 14 related the ease and difficulty of the

concepts to daily life, stating that concepts related to daily life were easier. Student 12 stated that the concept of art was easy; Students 3, 5, 16, and 17 stated that the concept of sports was easy. Students 3, 4, 7, and 8 stated that the concept of work/profession was easy; Students 12 and 16 stated that it was difficult. Student 5 stated that the concept of cinema was difficult because they did not like it, while Student 15 stated that the concept was easy. Students 2 and 2... Student 11 mentioned the difficulty of the concept of "wish," while Student 3 said the concept of "fashion" was difficult, and Students 11 and 21 said it was easy. Regarding the concept of "holiday," Students 11 and 12 stated that it was easy, with Student 12 attributing this ease to its connection to daily life. Concerning the concept of "education," Student 16 said it was easy, while Student 17 described it as difficult, lengthy, and boring. Regarding the concepts of "invention" and "inventor," Student 12 stated that "invention" was among the most difficult concepts due to its technical and abstract nature. According to Student 15, the concepts of "invention" and "inventor" were difficult, while Student 16 considered the concept of "inventor" easy. Student 12 indicated difficulty due to the abstract nature of the concepts; Student 14, due to a lack of practical application; and Student 18 stated that they learned the concepts easily through the teacher's tools. Table 12 reports the findings for the concept-teaching activities category and their benefits.

Table 12. Findings Related to the Category of Concept Teaching Activities and Benefits

Category	Code	Participant
Events	Visually supported activities	P8, P10, P12, P15, P16, P19
	Instructional model-supported activities	P7, P11
	Digitally supported events	P2, P8, P10, P13, P14, P20
Contribution of events	Language development	P1
	Making it easier to understand	P14, P20
	Learning through repetition	P3, P21
	Providing benefit	P4, P6, P8, P10
	Creativity	P5
	Skills-based development	P18, P20
	Cultural benefit	P9

As shown in Table 12, the classification, created with the categories "Events" and "Contribution of Events," contains 9 codes. Student 1 stated that it improved their Turkish of the concepts. Students 8, 10, 12, 15, 16, and 19 mentioned that projections, videos, and visual presentations displayed on the board were used as concept-teaching activities in the classroom. Students 7 and 11 stated that the teacher's application of the HCDM steps during the definition and prediction stages supported their practice. Student 2 said, "Canva, useful." Student 13 said, "Canva, group work." Student 20 said, "Canva. It made my Turkish listening and speaking easier." They discussed the Web 2.0 tools the teacher used to support concept teaching during the lesson and the positive impact these tools had on language skills. Students 8, 10, 12, 14, 16, and 19 mentioned the lesson's use of projections and group work. Students 3 and 21 said the activities were repetitive and that the repetition supported their learning. Students 4 and 6 mentioned that the activities were beneficial, while Student 5 stated that the "If Dreams Came True" unit in the lesson material was a creative activity that awakened their dreams. Students 18 and 20 said the activities were beneficial for their listening and speaking skills, and Student 9 stated that the concept of culture helped them learn new things about the country they were in. Table 13 reports the findings for the category concerning the instructor's use of different materials in concept teaching.

Table 13. Findings Regarding the Category of Whether the Instructor Utilized Different Materials in Concept Teaching

Category	Code	Participant
Use of different materials	Utilizing the material	P1, P2, P3, P5, P6, P7, P8, P10, P11, P12, P13, P14, P16, P19, P20, P21
	Utilizing digital tools/presentations	P7, P12, P13, P14, P16, P21
	Worksheets	P12, P15, P16
	The benefit of using materials	P4, P9, P15

According to Table 13, in response to the question about whether the instructor used different materials during the implementation, the category "Use of Different Materials" was identified, and the following codes were created: "Utilization of materials, Utilization of digital tools/presentations, Worksheets, Benefits of using materials." Participant 1 answered "No" to this question, while 2, 3, 5, 6, 7, 8, 10, 11, 12, 3, 14, 16, 19, 20, and 21 reported that different materials were used; 7, 12, 13, 14, and 21 particularly emphasized that the implementation using presentations was effective. 7, 12, 14, and 16 reported using digital tools such as video, Web 2.0 tools, and projection when using materials. 12, 15, and 16 reported using worksheets; 4, 9, and 15 said they benefited from the different materials used in the lesson because they were practical and useful for learning Turkish. Table 14 presents the findings on the contribution of teaching stages to the learning process.

Table 14. Findings Regarding the Category of Contribution of Teaching Stages

Category	Code	Participant
Instructional stages	Explanation step	P7, P8, P10, P14
	Recognition level	P6, P7
	Testing and feedback stage	P11, P13, P14
Contribution of teaching stages	Different contributions of the stages	P2, P4, P7, P12, P19
	Contribution to vocabulary learning.	O5, O18, O20
	Speaking in concepts	P15, P16
	The contribution of a positive approach	P17
	Contribution to Turkish language development	P3, P9, P21

As shown in Table 14, for questions about activities prepared according to the HCDM stages, categories such as "Teaching Stages" and "Contribution of Teaching Stages" were created. Codes such as "Explanation stage, Recognition stage, Test and feedback stage, Different contributions of the stages, Contribution to vocabulary learning, speaking with concepts, Contribution of positive approach, Contribution to Turkish language development" were organized based on the students' statements. Students 7, 8, 10, and 14 expressed their opinions regarding the explanation stage of the model, which explains the predicted concept, stating that the explanation stage contributed to

their understanding. Students 6 and 7 emphasized the recognition level, while students 11, 13, and 14 stated that the test and feedback stages contributed to their learning. Students 2 and 4 stated that the teaching stages were good, while students 7, 12, and 19 noted the contributions of the different stages of the teaching model. Student 12's thoughts on this matter are noteworthy. Student 12 stated, "Each stage allowed me to understand the concept from a different perspective. While the definition and explanation section provided basic information, the testing and feedback stages helped me reinforce what I learned, emphasizing how each stage supported learning from different angles." Students 5, 18, and 20 stated that the stages in the teaching model benefited their vocabulary learning. Student 16 emphasized that the exam, which was administered in the course and included in the teaching model, contributed to their speaking skills. Student 17 said that the stages of instruction, along with the teacher's positive approach, benefited them. Students 3, 9, and 21 stated that the stages in the teaching model contributed to their Turkish language skills. Table 15 reports the findings for the category concerning whether concepts are learned more effectively with HCDM.

Table 15. Findings Regarding the Category of Whether Concepts are Learned Better with HCDM

Category	Code	Participant
The quality of concept learning through HCDM	Contributing	P3, P4, P5, P6, P9, P10, P11, P13, P15, P20, P21
	Contribution to the learning process	P1, P2, P8, P12, P16, P17, P18
	Visual-assisted learning	P14, P19
	Connecting with life	P7

In Table 15, for the question regarding the impact of the teaching model on concept learning, the category "Quality of Concept Learning Through HCDM" was determined, and based on the students' statements, the following codes were identified: "Contribution, Contribution to the learning process, visually supported learning, Relating to life, Partial benefit."

Participants 3, 4, 5, 6, 9, 10, 11, 13, 15, 20, and 21 reported learning the concepts more effectively through HCDM. 9 stated that they did many activities outside of the textbook; 11 expressed their satisfaction with the model by saying, "Yes, I think so. Because every stage in the model effectively contributed to us." In the section coded as "Contribution to the learning process," students 1, 2, 8, 12, 16, 17, and 18 mentioned that the concept development model helped them understand concepts within context, allowed them to allocate more time for themselves, enabled them to understand better and review concepts, allowed them to learn concepts with their similarities and differences, prevented them from forgetting concepts, helped them learn concepts better, and enabled them to participate in the lesson and conversation actively. Student 1 emphasized that the process was positive for them, stating, "Yes, the Holistic Concept Development Model made it easier for me to understand the concepts chosen by our teacher not only from words, sentences, or texts, but also from the context. Student 14 emphasized visual learning, noting that they learn better by seeing the connections between concepts, and Student 19 highlighted learning better from pictures. Student 7 stated that concept learning is important,

mentioning that they constantly encounter the concept of profession, and answered the question by relating it to daily life.

3.3. Observation- Based Findings

In the first implementation, the observer rated all items on a "Completely Agree" scale (5 points) but gave item 17 (I17) a "Strongly Disagree" (1 point) rating. Regarding the item, "The teacher used appropriate Web 2.0 tools to reinforce and assess the concepts students learned during the lesson," the observer suggested, "Web 2.0 tools could be used," given the lack of practical implementation in the lesson. In the section on successful aspects, the observer expressed overall satisfaction, stating, "The students' contributions and interactions in the lesson were very good."

In the observation evaluation of the second implementation, the observer scored items I1, I2, I3, I4, I5, I6, I7, I10, I11, I12, I13, I14, I15, I16, and I18 as "Completely Agree" (5 points), indicating that these items were actively implemented. For I8, "Distinguishing examples were given for the conceptual confusion/misconceptions experienced by students regarding the concept they found." For I9, "Examples and non-examples were given for the conceptual confusion/misconceptions experienced by students regarding the concept," the observer agreed, suggesting that more distinctive examples and non-examples could have been provided. For I17, the observer stated "Strongly Disagree," indicating that the researcher did not utilize Web 2.0 tools. For the second implementation, the observer concluded, "Web 2.0 tools could be used." Along with this suggestion, he emphasized that students' participation and interaction in the lesson were good.

In the third implementation, the observer scored items I1, I2, I3, I4, I5, I6, I7, I9, I10, I11, I13, I14, I15, I16, I17, and I18 as "Completely Agree" (5 points) and provided an evaluation that supported the model steps in line with the course objective. The observer gave an "Agree" response (4 points) to items I8 ("Distinguishing examples were given for the conceptual confusion/misconceptions students experienced regarding the concept they discovered") and I12 ("Comparisons were made with related concepts to clarify the boundaries of the concept, and students' thoughts on this were obtained"), indicating that more examples and comparisons could be provided. Regarding the researcher's success, the observer noted that the students were highly motivated and enthusiastic and suggested that the number of examples provided should be slightly higher.

In the fourth intervention, the observer gave positive ratings across all items, assigning a score of 4 (equivalent to "Agree") to items I8, I9, and I13. For items I8 ("Distinguishing examples were given for the conceptual confusion/misconceptions students experienced regarding the concept"), I9 ("Examples of both relevant and irrelevant elements were given for the conceptual confusion/misconceptions students experienced regarding the concept"), and I13 ("Discussions were held with students on the misuse or abuse of the concept, and various examples were given to prevent this"), the observer suggested providing more examples and discussions. The observer emphasized that the Web 2.0 tools were very well received by the students and suggested that active participation could be further increased.

Regarding the fifth implementation, the observer gave an "Agree" rating for items I10 and I13 and a 5-point rating for all other items, corresponding to "Strongly Agree." The statement, "Students were asked to provide example sentences in accordance with the formal level of the HCDM to reinforce their understanding of the concept," was scored 4 points, reflecting students'

lower performance in providing example sentences at the formal level compared with other stages. For item I13, "Discussions were held with students about the misuse or abuse of the concept, and various examples were given to prevent this," the observer gave an "Agree" rating, indicating that more examples should be provided to prevent misuse or abuse of the concept. The observer noted that students were somewhat less enthusiastic in class than in previous weeks and that the instructor was making an effort to engage them.

The observer gave an "Agree" rating for I8, I9, and I13 in the sixth implementation, and a "Strongly Agree" rating for I1, I2, I3, I4, I5, I6, I7, I10, I11, I12, I14, I15, I16, I17, and I18, indicating that the HCDM stages included in the implementation were generally implemented. The observer stated that they had no opinion on the sixth implementation and emphasized that there were no areas for improvement from an instructor's perspective.

In the seventh exercise, the observer, who gave a "Strongly Agree" rating for all items, rated item I9, "Examples of both acceptable and unacceptable elements were given to illustrate the conceptual confusion/misconceptions experienced by students regarding the concept," as "Undecided." Regarding the opinions on the implemented practices, the observer indicated "None." They suggested that more examples could be provided.

The observer agreed with item I8, "Distinguishing examples were given for instances of conceptual confusion/misconceptions experienced by students regarding the concept they discovered," and strongly agreed with the other items in the eighth activity. The observer noted that student participation was very good and offered no suggestions regarding the activities.

During the week in which the ninth intervention was conducted, the observer evaluated statements I9 ("Examples and non-examples were given to illustrate the conceptual confusion/misconceptions experienced by the students regarding the concept") and I14 ("The instructor used the concept teaching tool they prepared interactively with the students (mind map, concept map, etc.)") as "Agree," and evaluated I1, I2, I3, I4, I5, I6, I7, I8, I10, I11, I12, I13, I15, I16, I17, and I18 as "Strongly Agree," indicating that all other stages were adequately completed. The observer stated that the students' motivation was quite good and offered no suggestions.

Regarding the scope of the tenth implementation, the observer rated I13 as "Undecided" and I14 as "Agree," noting that participation was very good, though the sample size could have been larger.

For the eleventh intervention, the observer indicated "Agree" for I8, "Distinguishing examples were given for the conceptual confusion/misconceptions students experienced regarding the concept they discovered," and "Undecided" for I9, "Examples of elements that are and are not examples of conceptual confusion/misconceptions students experienced regarding the concept were given." For all other stages, the observer indicated "Strongly Agree." Regarding the aspects they found successful, they stated that students' participation was very good, their motivation was appropriate, and they had no suggestions to offer.

Table 16 shows that the observer awarded full marks to items I1, I2, I3, I4, I5, I6, I7, I11, I15, I16, and I18 across all 11 implementations, indicating that these items fully fulfilled their functions in the course. For the remaining items, the observer's ratings were either "Undecided" or "Agree," as shown in Table 16.

Table 16. External Observer's Assessment of Eleven Implementations

Imp.	Mean	Med.	Mode	Min.	Max.	SS	Theme	Code	Observer commentary
1	4.78	5.0	5.0	1.0	5.0	0.94	Class participation - Digital tools	Good interaction	The students' contributions and interactions in the lesson were excellent. Web 2.0 tools can be used.
2	4.67	5.0	5.0	1.0	5.0	0.97	Adapting - Digital tools	Teacher-student harmony	The rapport between teachers and students was excellent. The use of Web 2.0 tools would be beneficial.
3	4.89	5.0	5.0	4.0	5.0	0.32	Motivation - Example	High motivation	The students were very motivated and enthusiastic; the number of examples given could have been higher.
4	4.83	5.0	5.0	4.0	5.0	0.38	Class participation - Digital tools	Web 2.0 tools satisfaction	The Web 2.0 tools were very well received. Student participation could have been more active.
5	4.89	5.0	5.0	4.0	5.0	0.32	Class participation - Motivation	Educational effort	The teacher tried to engage the students in the lesson. The students were somewhat passive during the lesson.
6	4.83	5.0	5.0	4.0	5.0	0.38	Teacher developmen t	Teacher development	There were no areas that needed improvement from the teacher's perspective.
7	4.78	5.0	5.0	3.0	5.0	0.55	Examples	Sample quantity	The sample size could have been larger.
8	4.94	5.0	5.0	4.0	5.0	0.24	Class participation	High participation	Student participation was excellent.
9	4.89	5.0	5.0	4.0	5.0	0.32	Motivation	High motivation	The students were highly motivated.
10	4.83	5.0	5.0	3.0	5.0	0.51	Class participation - Examples	High participation	Participation was very good. The sample size was a little low.
11	4.83	5.0	5.0	3.0	5.0	0.51	Class participation - Motivation	High motivation and participation.	The students were highly motivated. Class participation was excellent.

Table 16 presents a weekly overview of the data obtained from the external observer form. The findings in the table are consistent with the analyses' results and reflect assessments of the process's overall functioning.

4. Discussion

The findings indicated that concept-teaching activities yielded positive results in the experimental group, where instruction was conducted using the Holistic Concept Development Model (HCDM). A significant difference was found between the post-test scores of the experimental group (80.29), in which instruction was conducted using the HCDM, and the control group (47.46), in which lessons were conducted using existing course materials. The mean difference between the two groups was determined to be 39.59, and this difference, with a 95% confidence interval, indicated the effectiveness of the activities implemented in the experimental group. According to this finding, it can be concluded that the HCDM and the activities (concept-

teaching tools, Web 2.0 tools, and student products) implemented in the experimental group were effective in concept teaching. This finding is also consistent with other studies on concept teaching in the field of teaching Turkish to foreigners (Bülbül, 2015a; Erdil, 2022; Gerek, 2022; Zorpuzan, 2019).

The higher achievement of the students in the experimental group may be attributed to the presentation of abstract concepts in accordance with the stages of the HCDM, including definition, explanation, concrete examples, defining and non-defining attributes, and reinforcement through example sentences in line with the formal stage. For students to learn concepts meaningfully, enriching instruction by using multiple teaching methods rather than relying on a single method is necessary for long-term retention (Ayas et al., 1997, as cited in Malatyalı & Yılmaz, 2010).

Another factor that is thought to have contributed to student achievement is the use of Web 2.0 tools, through which students actively participated and interacted with one another. Supporting the lesson with digital tools, unlike traditional teaching, attracted students' attention and enhanced motivation. Presenting concepts through visual and auditory modalities such as games, puzzles, multiple-choice questions, Venn diagrams, short videos, and story creation contributed to meaningful learning and increased achievement. This finding, obtained from student forms, is consistent with previous studies (Hamlı & Hamlı, 2021; Ortaakarsu & Sülün, 2025; Turhan & Baş, 2017; Uyar & Tekin, 2024).

Furthermore, to improve concept retention, teaching tools for each concept were projected onto the board in each lesson, and these tools (concept maps, mind maps, knowledge maps, structured grids, etc.) were further enriched with different concepts alongside the students. It was determined that concept-teaching tools positively contributed to learner motivation and meaningful learning by making abstract concepts more tangible. This finding is also consistent with similar studies (Bülbül, 2015b; Erdil, 2022; Erdoğan, 2016; Gerek, 2022; İzci & Açıkgöz Akkoç, 2023; Kılıç & Sağlam, 2004; Kırkkılıç et al., 2016; Zorpuzan, 2019).

Therefore, using concept maps, concept puzzles, and other concept teaching tools to support concept learning, taking individual differences into account, supporting concepts with digital tools to address different learning needs, and creating an interactive classroom environment by collaboratively developing concept teaching tools and reviewing student work with feedback at the end of the lesson may make concept teaching more engaging, effective, and memorable than traditional teaching methods.

5. Conclusion and Recommendations

Overall, the findings indicate that the HCDM provided an effective framework for improving learners' concept learning throughout the implementation process. In 11 implementations conducted during the research, activities were prepared according to the HCDM steps. These activities were supported by concept-teaching tools and Web 2.0 tools and were applied to the experimental group. Based on the data obtained, activities prepared in accordance with the HCDM and the model steps were effective in improving students' success in concept learning in the experimental group. Throughout the research, it was observed that learners experienced difficulties with concept learning, but when these difficulties were addressed through visual and auditory methods, they participated in the learning process. Therefore, it was determined that teacher-learner

interaction contributed to planning the process, diversifying it with different ideas, and encouraging passive learners to participate in the lesson. In the interactive classroom environment created with HCDM, it was determined that the learner was motivated not only in reading but also in speaking and writing. Using the developed concept-teaching model, the concepts the learner was confused about were identified, and they were reinforced through examples within the model steps until they were distinguished from other concepts. This situation motivated the learner to learn other concepts and supported them in learning previously learned concepts through rote memorization in a permanent and meaningful way. This situation also aligns with the observer form data, which state that "students' interaction was good and their motivation was high." The findings of the study show that concept-teaching activities in the experimental group supported concept teaching more effectively than lessons using traditional methods, and that students developed meaningful mental processes towards the concepts. This is consistent with other studies on the subject (Bülbül, 2015a; Erdil, 2022; Gerek, 2022; Zorpuzan, 2019). The reason for the success of the students in the experimental group can be attributed to the fact that abstract concepts were presented in the activities in accordance with the stages of the Conceptual Concepts Framework, with definitions, explanations, concrete examples, distinguishing and non-distinguishing characteristics, and then reinforced with example sentences in accordance with the formal stage. Another factor affecting students' success is the use of Web 2.0 tools in the activities, which enabled students to be active and interact with each other. Supporting the lesson with digital tools, unlike traditional lesson delivery, attracted students' attention and sustained their motivation. Addressing concepts visually and audibly through tools such as games, puzzles, multiple-choice questions, Venn diagrams, short videos, and storytelling has contributed to meaningful learning and increased success. Furthermore, to enhance concept retention, concept-teaching tools prepared for each concept were projected onto the board during each lesson, and these tools (concept maps, mind maps, knowledge maps, structured grids, etc.) were further enriched with additional concepts in collaboration with the students. Based on all of this, using concept maps and concept puzzles alongside other concept teaching tools, taking individual differences into account, supporting concepts with digital tools to address different learning areas, creating an interactive classroom environment by developing concept teaching tools together, and reviewing and providing feedback on the topics covered with student work at the end of the lesson will make concept teaching both fun and memorable, unlike traditional teaching methods. Based on these results, the following recommendations are made:

- Based on the research findings, concept teaching tools developed around cognitive and metacognitive skills play a supportive role in helping learners establish cause-and-effect relationships. Therefore, teaching models and concept-teaching tools developed for this purpose can be used to show learners the cause-and-effect relationships among events, phenomena, and situations.
- The study showed that students were more active in lessons using concept-teaching tools prepared according to the HCDM steps than in previous lessons. Therefore, thematic activities can be prepared using concept-teaching tools to support lasting, meaningful learning.
- The research showed that the activities prepared throughout the study supported teacher-learner and learner-learner interaction. Therefore, an interactive classroom environment can be created through activities that use concept-based teaching tools.
- During the research period, all activities were presented to the students alongside the course material and aligned with the B1 level. Concept-teaching tools can be used not only at a specific

level but across all levels of students, making them an alternative and effective method for students with different learning styles.

- The study group observed that learning through concept teaching tools, supported by Web 2.0 tools, improved reading comprehension and other abilities (speaking, writing). Therefore, it can be concluded that activities using concept teaching tools will contribute to all language skills.
- The study found that Web 2.0 tools provide convenience not only for learners but also for teachers, and their use plays a helpful role in making lessons more concrete. Based on this idea, creating different concept-based teaching tools using digital tools can free the lesson from a monotonous process.
- The study found that concept teaching tools and digital tools helped students understand abstract concepts more easily by making them concrete. Therefore, they can be used in visual presentations of complex or difficult-to-understand topics to facilitate recall.

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This journal adopts the COPE (Committee on Publication Ethics) principles.

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