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Trends in the Use of Augmented Reality in Character Development within Local Wisdom in Schools: A Bibliometric Study

I Putu Eka Indrawan[1], Ni Nyoman Parwati[2], I Made Tegeh[3] and I Gde Wawan Sudatha[4]

[1]Student, Education Technology, Universitas Pendidikan Ganesha, Indonesia
[2]Lecture, Education Technology, Universitas Pendidikan Ganesha, Indonesia
[3]Lecture, Education Technology, Universitas Pendidikan Ganesha, Indonesia
[4]Lecture, Education Technology, Universitas Pendidikan Ganesha, Indonesia
E-mail: [1]eka.indrawan@student.undiksha.ac.id, [2]nyoman.parwati@undiksha.ac.id, [3]im-tegeh@undiksha.ac.id, [4]igdewawans@undiksha.ac.id
ORCID: [1]https://orcid.org/0000-0003-2431-7603, [2]https://orcid.org/0000-0001-8464-7538, [3]https://orcid.org/0000-0002-7446-5869, [4]https://orcid.org/0000-0002-9433-898X
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***Abstract* - This paper provides a thorough assessment and analysis of prior research literature. The objective of this review is to ascertain the disparities in research about the Application of Augmented Reality in character development and to determine the best actions to continue this research. This goal is achieved through bibliometric analysis and descriptive content. The keywords "Augmented reality" and "character" were Derived from the Scopus research database for bibliometric analysis. Publications from 2014 to 2024 can only be accessed. The data indicate a substantial rise in the amount Investigation carried out on the application of augmented reality in character development. Specifically, there were 22 papers published in 2022, marking the largest amount of studies and citations was documented during that year. The IEEE Transactions on Visualization and Computer Graphics journal is the most cited source. Quantitative methods are used more often than qualitative methods. Methods such as Descriptive Statistical Analysis and Regression Analysis are the most frequently used, with fifty and forty-five occurrences, respectively. This research could be a valuable reference for other academics exploring the implementation of augmented reality in character analysis. Moreover, the presence of research deficiencies can motivate other scholars to confront these deficiencies with the aim of enhancing the utilization of augmented reality in the cultivation of character in children.**

Keywords: **Augmented Reality, Bibliometric Analysis, Character Formation, Local Wisdom**

I. INTRODUCTION

Local wisdom contains noble values such as solidarity, togetherness, and harmony with the environment. This has great potential to support character development in schools (Aljojo et al., 2020). To enhance students' learning experience, these values can be incorporated into the school curriculum. Students not only gain knowledge about ethical principles but also develop Students develop a strong feeling of cultural pride when they acquire knowledge about indigenous wisdom. For example, Bali School uses the concept of "Tri Hita Karana," which Encourages a balanced and cooperative interaction between individuals and God, with other individuals, and with the natural world (Hakam et al., 2022). This not only enhances students' knowledge but also instills a greater sense of responsibility towards one another and their environment. can promote the growth of kids into well-rounded individuals with robust character (Galani & Vosinakis, 2024; Marto, 2023; Terzidou et al., 2016).

Augmented reality (AR) media is gaining significance in education in the contemporary age. Ouali et al., (2024). In this way, AR makes learning more interactive and fun attaching computerized elements to the real world. This helps students relate a concept to something more tangible and practical (Aljojo et al., 2020, Buchori et al., 2016). Such capacity derive from the potential of the technology as Augmented Reality (AR) for furthering the contextual character education in schools by adopting indigenous knowledge. According to (Marcel, 2019; Ge, 2024) — educational applications of augmented reality (AR) can increase interactivity and engagement in learning, enrich the learning process, and help students to bring indigenous knowledge in education (Surendar et al., 2024). AR allows students to learn and value cultural norms in a contemporary and interesting context, with the local heritage being integrated very practically in the classroom (Zhai & Wang, 2023). The morals included can be more easily visualized for students when they are brought to life through AR applications like folklore or local cultural rituals (Capecchi et al., (2024); Marcel, (2019). Thus, teaching character based on local wisdom by employing AR technology is a very innovative method that can be used at school (Xie et al., 2024).

The stages of planning, development, implementation, and evaluation are the concepts that can be employed in applying Augmented Reality (AR) on character education based on local wisdom (Hakam et al., 2022; Kim & Kim, 2018). When designing plan, it is extremely critical to understand what you want your students to learn and how the AR can be used to meet those learning goals. Development Stage: The creation of AR Creation that resonated with local wisdom values. The

implementation stage, on the other hand, refers to the use of AR content in teaching and learning (Wen, 2021). Last, an assessing step was conducted to explore that how AR utilization effectively moulds learning character of students (Perry, 2021). This has since proved to be a systematic and efficient way of incorporating something as new and exciting as AR into the curriculum. It is important to evaluate on time if the character development of young learners really improves with the help of AR applications. These assessments can furthermore be used outside the principal project, for enhanced and refined utilization of augmented reality in upcoming projects such as this (Terzidou et al., 2016). Augmented Reality (AR) is defined as a technology that embeds virtual elements in the real world environment or interactions, makes learning more engaging and interactive to blend realistic tangible realm experience with VR objects entering the physical space (Lee, 2021). Augmented reality (AR), as described is the integration of digital and physical objects with a live, real-time 3D environment AR creates simulations of character values and provides info for students to experience such personal traits (Zhang et al., 2020). This gives students an international understanding to Ascertain Ethics and Etiquette in a real life settings (Potkonjak et al., 2016). In this way, moral stories (Duckett, 2024) are visualized and the students directly see how different values are applied in everyday life. Character in development experts identified AR as a great instrument to apply when building a character, since this technology is capable of producing an interactive and immersive environment for educational purposes. By Teaching And Learning Moral Ideas Through Hybrict Experiential Experience, In A Natural Way of Being Taught (Del Moral Pérez et al., 2023). AR has potential to help students learn local wisdom values interactively IoT in education | Free Full-Text | IoT-Based System for Outdoor Arabic Learning | HTML This helps the students to experience things which are otherwise hard for them understand through regular traditional learning. One other research shows that the use of AR can help in creating an intuition for what are, most abstract concepts like complexity of virtues in a student (Delello et al., 2018; Remolar et al., 2021). Recently, there is a gap of comprehensive study Utilising Augmented Reality (AR) to incorporate indigenous knowledge on character development in educational institutions as highlighted by previous research. Although augmented reality (AR) has been applied in many educational domains, there are few to none related research that is aimed to construct character through local wisdom values with AR technology. The majority of AR studies currently regard it as technical or apart from education, rather than educational technology that is rooted in the regional moral and cultural characters. The present work does a comprehensive critical review and analyses of the published research works, to have an understanding about why we see differences in research (Utomo & Latukismo, 2022). A primary objective of this research is to provide a basis for some investigations into the deployment of augmented reality applications. Development and forming of characters based on regional knowledge in educational institutes (Sesmiarni et al., 2023; Kuo-Hung et al., 2016).

II. METHODOLOGY

The research purpose of this review is to discover the strengths and weaknesses of previous studies in applying augmented reality technology to develop characters of local wisdom in students at educational institutions. The study also looks into what else might be necessary to complete this research. Two separate methodologies are used to achieve this goal: Descriptive content analysis and bibliometric analysis. Bibliometric analysis is a method of measuring the extent and type of reference to, for example, a report or data paper in published scientific research. This selection was made because it accurately represents the state of research from several dimensions: historical and contemporary (Machmud et al., 2023; Sidiq, 2019). Analysis of bibliometrics enables scholars should explore the dynamics of contemporary research from a broader perspective (Zupic & Čater, 2015). In a more thorough and comprehensive approach, descriptive content analysis is employed To examine developing research patterns in relation to the application of augmented reality (AR) in character development within local wisdom in schools. Analysis of descriptive material is employed to identify research subjects pertaining to Applicating augmented reality to the research of character development. Furthermore, this descriptive content analysis will demonstrate study patterns concerning the development of character through the application of augmented reality in local school wisdom, focusing on research methodologies (Hakam et al., 2022; Mayr et al., 2018).

2.1. Data Collection

"Augmented reality" and "character" Keywords used to identify research on the use of augmented reality for character development within local wisdom in schools for bibliometric analysis. We focused on articles listed in Scopus from 2014 to 2024 during the information search process. By using this method, we can produce reliable findings by ensuring that we obtain relevant and up-to-date data. Therefore, a total of 191 initial articles were found. The inclusion criteria used to select articles are publications in English and a clear exposition of the augmented reality media used or developed. On the other hand, the exclusion criteria include poorly described methods, research that serves as a precursor to other studies, the use of augmented reality in character formation within local wisdom, incomplete articles, and those not published in English. Characteristics and augmented reality usage summary shown in Table I.

TABLE I CHARACTERISTICS AND AUGMENTED REALITY USAGE SUMMARY

Description	Results
MAIN INFORMATION ABOUT DATA	
Timespan	2014:2024
Sources (Journals, Books, etc)	138
Documents	191
Annual Growth Rate %	6.68
Document Average Age	3.92
Average citations per doc	16.93
References	7422
DOCUMENT CONTENTS	
Keywords Plus (ID)	1172
Author's Keywords (DE)	726
AUTHORS	
Authors	681
Authors of single-authored docs	25
AUTHORS COLLABORATION	
Single-authored docs	27
Co-Authors per Doc	3.77
International co-authorships %	14.14
DOCUMENT TYPES	
article	191

Next, PRISMA comprises a total of 191 distinct papers. Initial analysis focuses on the authors, countries, and organizations that exhibited the highest level of activity over the specified time frame. Next, the distribution of the most frequently referenced publications and journals is examined. Subsequently, the writers and sources that have shown peak productivity are examined. Refer to the image below for the diagram illustrating the article selection procedure.

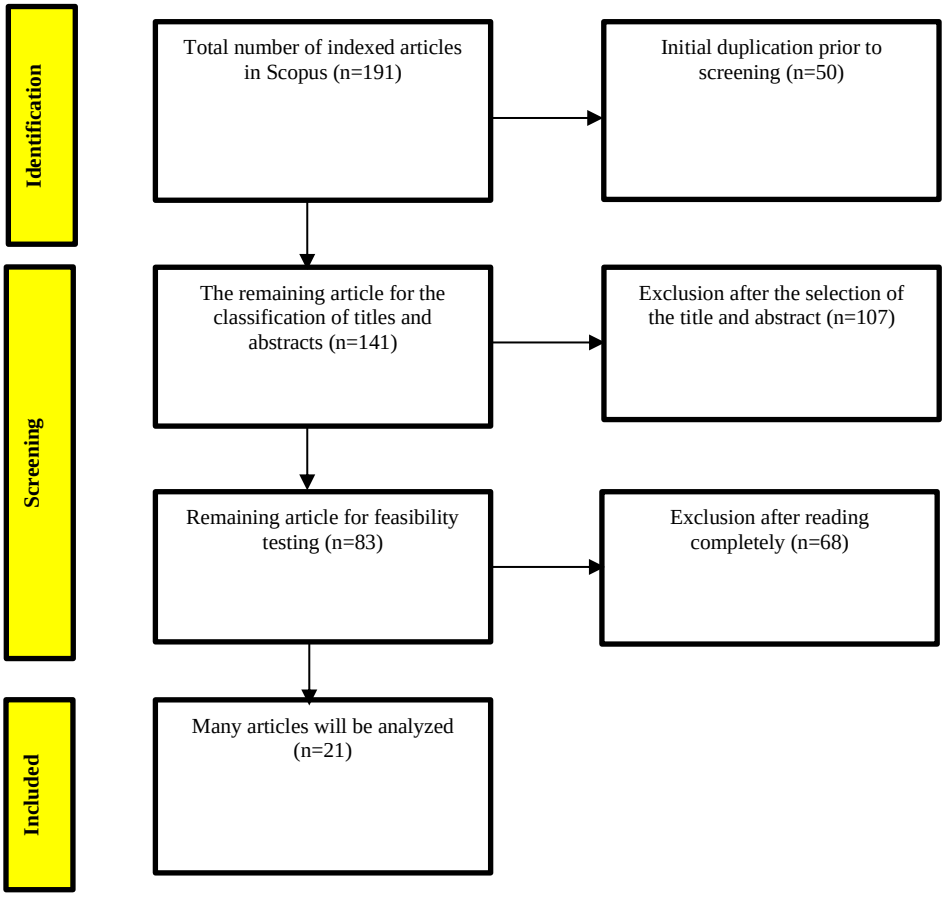

Fig. 1 An Illustration of the Search and Selection Procedure is Shown in the Fig. 1 Above

The Scopus index has recognized a total of 191 articles. The initial step was doing a duplication check on the discovered articles, which led to the elimination of 50 articles (n=50). Consequently, there were 141 articles that remained for title and abstract screening. After excluding the last 141 articles, a total of 107 articles were excluded. This left 68 items for feasibility testing by reading the whole text of the articles. The detected papers in the feasibility test exclusions were indexed in Scopus.

2.2. Data Analysis

A bibliometric analysis is performed using the Bibliometrix software, which is included into RStudio. The bibliometric version of Biblioshiny, a programmable tool that does not require coding, was employed to streamline the analysis. Bibliometrics is the quantitative instrument used to evaluate data on publications and citations. At now, bibliometrics is widely employed in nearly all scientific disciplines to assess the level of development, prominence of authors, conceptual and intellectual frameworks, as well as trends within the scientific community. In descriptive content analysis, data analysis techniques are employed to gather comparable data within particular conceptual frameworks and themes (Aria & Cuccurullo, 2017).

III. RESULTS AND DISCUSSION

3.1 Literature Review Analysis

A comprehensive search in the scopus database yielded a total of 191 articles regarding the domain of social sciences using the keywords "Augmented reality" and "character". These papers were subsequently examined. Below are the results of the bibliometric analysis implemented with the biblioshiny software.

3.2. Scientific Output Distribution on an Annual Basis

The analysis conducted with Biblioshiny shows that the quantity of published research pertaining to the application of augmented reality in character development has significantly increased since 2022. Despite a downward trend in 2015, it rose again in the following year. Fig. 2 shows that publications discussing the use of AR in character development occurred most frequently in 2024, with a total of 21 documents.

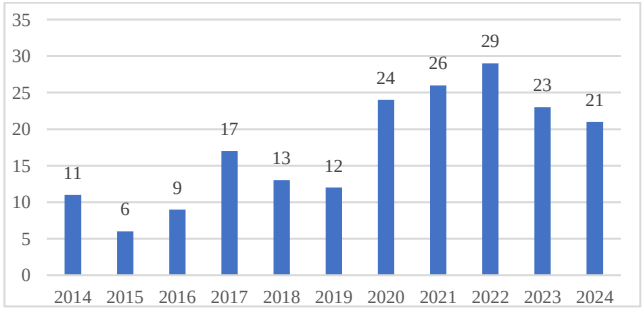

Fig. 2 Annual Distribution Of Scientific Production

3.3. Country-wise Distribution of Scientific Output

The distribution of scientific output by nation is depicted in Fig. 3, where the blue-colored regions represent countries engaged in Investigation on the utilization of augmented reality for applications character creation. More intense blue hues signify a greater quantity Collection of scholarly articles on the implementation of augmented reality in character development generated by that particular country. Detailed scientific production statistics of the country is presented in Table II, revealing that China published 174 publications between 2014 and 2024. Indonesia obtains the tenth position with a cumulative count of 21 publications.

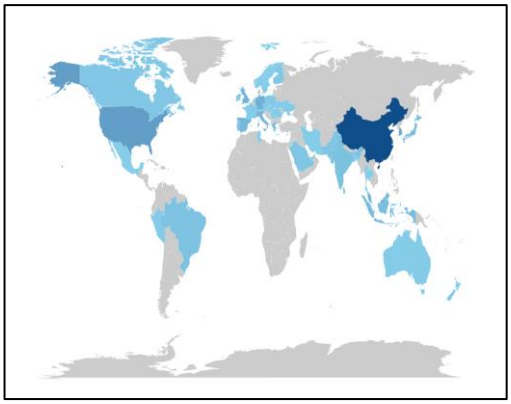

Fig. 3 Country-Wise Distribution of Scientific Output

TABLE II. ANALYSIS OF SCIENTIFIC OUTPUT BY COUNTRY DISTRIBUTION

Country	Freq	%	Country	Freq	%
CHINA	174	27.36	POLAND	7	12.07
USA	63	9.91	CZECH REPUBLIC	6	10.34
SOUTH KOREA	43	6.76	AUSTRALIA	4	6.90
GERMANY	38	5.97	ROMANIA	4	6.90
UK	36	5.66	UKRAINE	4	6.90
MALAYSIA	34	5.35	ISRAEL	3	5.17
ITALY	31	4.87	NEW ZEALAND	3	5.17
SPAIN	30	4.72	PERU	3	5.17
GREECE	27	4.25	SERBIA	3	5.17
JAPAN	23	3.62	TUNISIA	3	5.17
INDONESIA	21	3.30	UNITED ARAB EMIRATES	3	5.17
INDIA	16	2.52	BANGLADESH	2	3.45
BRAZIL	15	2.36	FRANCE	2	3.45
SWITZERLAND	12	1.89	IRAN	2	3.45
PAKISTAN	11	1.73	NORWAY	2	3.45
SAUDI ARABIA	11	1.73	AUSTRIA	1	1.72
SINGAPORE	10	1.57	HUNGARY	1	1.72
CANADA	9	1.42	MEXICO	1	1.72
SLOVAKIA	9	1.42	NETHERLANDS	1	1.72
FINLAND	8	1.26	SRI LANKA	1	1.72
PORTUGAL	8	1.26	SWEDEN	1	1.72
IRELAND	7	1.10	THAILAND	1	1.72

3.4. Countries Most Frequently Referenced

The analysis done with Biblioshiny revealed that Macedonia is the predominant country in terms of citations for research pertaining to Augmented reality use in character development. Investigation of the execution of augmented reality (AR) in field character development collected a grand total of 2.110 citations between 2014 and 2024, as depicted in Fig. 4. This figure is far smaller in comparison to the 437 citations garnered by China.

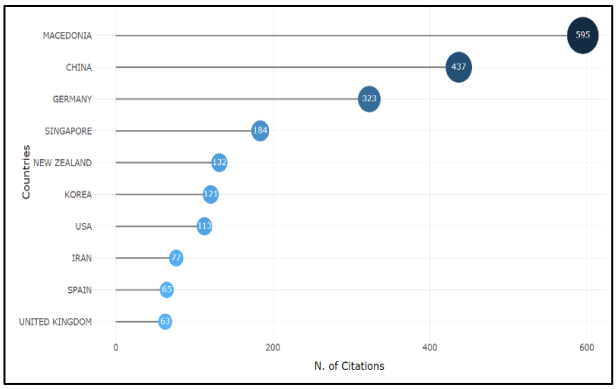

Fig. 4 Displays the Distribution of the Countries Most Frequently Cited

3.5. The Most Cited Source

Fig. 5 indicates that the IEEE Transactions on Visualization and Computer Graphics the a journal is the optimal frequently cited citation for study on the application of augmented reality in character development. This scholarly publication showcases novel concepts and progress in the field of technological research. This publication contains six quotations pertaining to exploration of the integration of augmented reality in character development study.

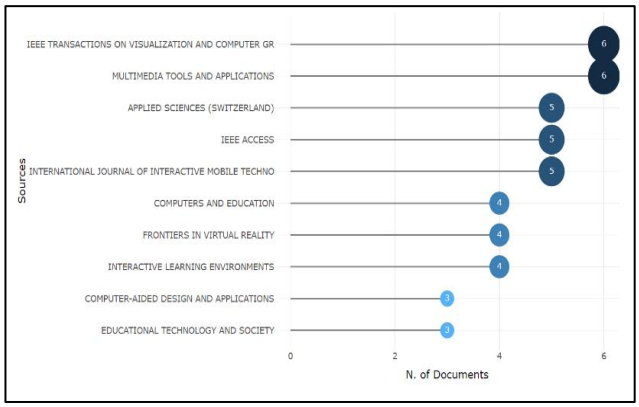

Fig. 5 Source Citation Distribution

3.6. The Most Extensively Referenced Document Worldwide

The bibliometric study reveals that the paper titled "Virtual Laboratories for Education in Science, Technology, and Engineering: A Review" has garnered extensive research citations specifically Exploring Augmented reality is applied in character production. The book (Potkonjak et al., 2016) has garnered 595 citations. One virtual laboratory application addressed in this article is augmented reality (AR). Fig. 6 depicts the document having the greatest amount of written references recorded worldwide.

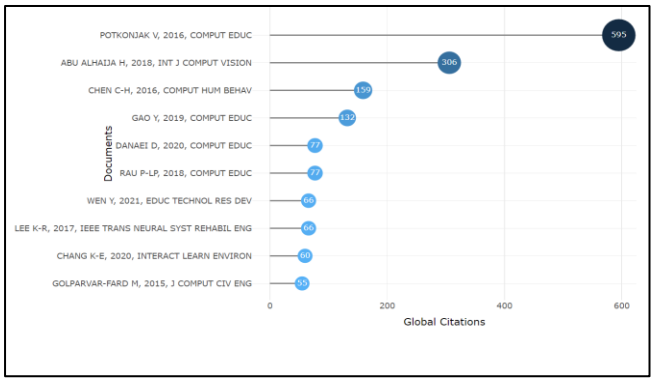

Fig. 6 The Most Frequently Referenced Papers Worldwide

3.7. Network of Joint Events

Fig. 7 displays the co-occurrence network derived from Investigations The development of characters within the framework of augmented reality application. The data presented here illustrates the correlation between the keywords employed by the author. Collectively, the findings suggest the existence of two primary categories: augmented reality and character.

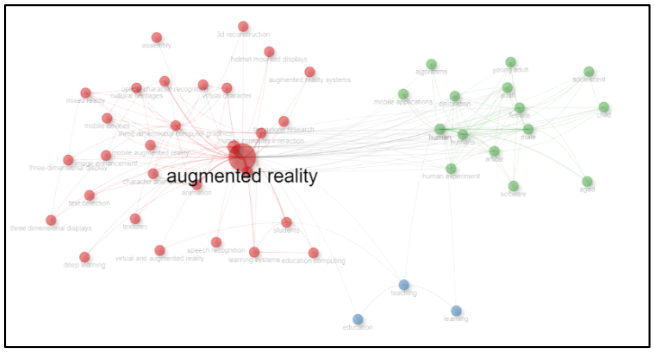

Fig. 7 Joint Events Network

3.8 Descriptive Content Analysis

An examination of 21 chosen papers pertaining to the topic of augmented reality use in character development, following the PRISMA stages, is provided below. This paper has been published between the years 2014 and 2024. This descriptive study covers the research field, research technique and design, research tools, sample population, size, and sampling technologies.

3.9 Approach and Design of the Research

Researchers are investigating augmented reality (AR) application for characterisation. A multitude of methodologies and research frameworks are employed. Scholars employ three primary methodologies: qualitative, quantitative, and combined. The quantitative method is most often employed. Of a grand total of 21 documents that underwent evaluation. The Tree of Life depicts the methodology and structure of augmented reality study in character development that will be carried out by researchers between 2014 and 2024.

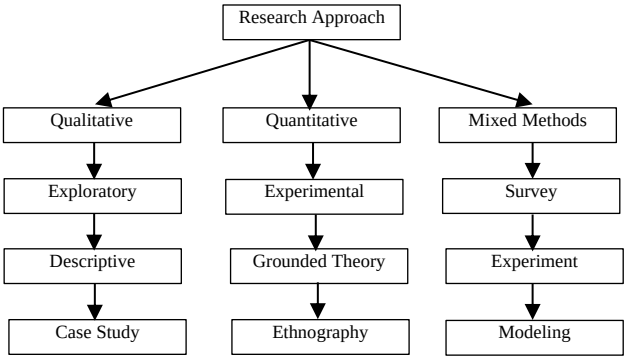

Fig. 8 Illustrates The Methodology and Structure of the Tree Map Study

Fig. 8 displays the tree diagram of most often used techniques and study designs. The highest level of the tree is occupied by "Research Approaches," which comprises three primary branches: quantitative, qualitative, and mixed methodologies strategies. There are three primary branches of research designs: exploratory, descriptive, and case studies. These designs aim to gain a comprehensive understanding of events by direct observation, interviews, or text analysis. The quantitative branch encompasses designs such as experiments, theory-based techniques, and ethnography, which exemplify the correlation between research methods and the employed designs. Moreover, this demonstrates the interrelationship between each approach and their applicability in diverse study settings (Sulaiman et al., 2023).

TABLE III RESEARCH METHODOLOGY AND DESIGN COUNT

Methodology/Design	Count
Research Approach	3
Qualitative	3
Quantitative	3
Combinational Methods	3
Exploratory	1
Description	1
Empirical Case Study	1
Grounded Theory Ethnography Survey	1
Experimental Modelling	1
Research Approach	1
Qualitative	1
Quantitative	1
Combinational Methods	1

Three main approaches (qualitative, quantitative, and mixed) and the research designs used in the tree map are described in Table III. The quantitative approach includes experiments, descriptive studies, and case studies, while the qualitative approach encompasses experiments, grounded theory, and ethnography. The mixed approach includes surveys, experiments, and modeling. The tree diagram only displays this one specific design, indicating that each research category has a different focus (Papaefthymiou et al., 2017).

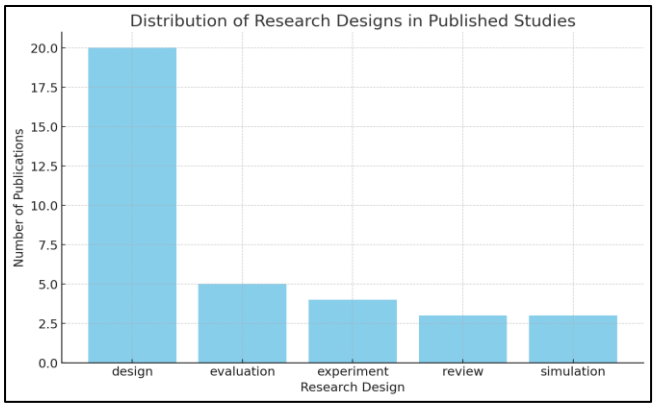

Fig. 9 Distribution of Research Designs in Published Studies

Based on the available information, the distribution of research designs used in the published studies is illustrated in Fig. 9 above. The most common type of design is "Design," followed by "Evaluation," "Experiment," "Review," and "Simulation." In published research, the research design indicates that "design" is the most common methodology, followed by "evaluation," "experiment," "review," and "simulation." Research indicates a preference for design-based methodologies. Perhaps this is a result of its adaptability and extensive use in several academic disciplines, particularly in the realms of technology and systems research. Similarly, how to assess is important as well because we should examine whether research results are consistent with what we intended. Alternatively analytical design is better than simulation and experiments (cos constrained in a context or require specialized tools and equipments) (Hanafi et al., 2021).

3.10. Methods of Data Analysis

Various quantitative and qualitative data analysis methods are used to extract information from the collected data. Quantitative methods that were purposeful in analysing numerical data, quantifying the connections between variables, and comparing means among groups for significance differences using Descriptive Statistical Analysis, Regression Analysis and ANOVA (Hanafi et al., 2021). Qualitative methods, on the other hand, such as content and thematic analysis, are used to illuminate the patterns, themes and meanings within textual data or narratives. This gives depth to the research study, filling out context and views on the part of the research subject. To explore particular types of interventions this is ideal; it gives interpretative depth to site visits and the ability to aggregate information using quantitative data while ensuring that we still have valid statistical tests when appropriate for these broader surveys (Stefaniak et al., 2022).

TABLE IV DATA ANALYSIS METHODS TABLE

Analysis Method	Approach	Description
Descriptive Statistical Analysis	Quantitative	Summary of data based on statistical measurements such as mean, median, mode and standard deviation.
Regression Analysis	Quantitative	This study looks at assessing the relationship of one or more explicative and independent variables with a response.
Analysis of Variance (ANOVA)	Quantitative	Test of the means among three or more groups for significance differences Testing quantitatively how well two variables are correlated.
Correlation Analysis	Quantitative	How related the two variables are Finding the fundamental form of many correlated variables.
Factor Analysis	Quantitative	Discovers an internal structure or inherent patterns among a range of related variables.
Content Analysis	Qualitative	Reading logs on how people communicate, or what they are saying.
Narrative Analysis	Qualitative	Exploring stories or narratives as a means to examine how individuals and groups make sense of their lives.
Theme Analysis	Qualitative	heme/pattern Picking in qualitative data.
Cluster Analysis	Quantitative	Separating objects or cases into similar groups.
Analysis of Discriminants	Quantitative	Discriminant analysis—separating groups using predictor variables.

Table IV, Factor Analysis, Analysis of Variance Some of the called-for techniques in this quantitative approach include ANOVA, Regression analysis, and Descriptive Statistical Analysis. Decision making tools are used tools to measure and analyze numerical data by using stats such as summarisation with basic statistical measures, examining amounts of relationships between variables or in exploring structures underlying the correlated variables (Perry, 2021). Additionally, from the qualitative point of view, Content Analysis, Narrative Analysis and Thematic Analysis are other techniques that aim to interpret non-numeric data seeking for patterns, themes or even meanings hidden in texts and narratives. Table II Data analysis techniques according to research methodologies. Quantitative methods are systematic in nature and designed with measurable processing assumptions thereby, the results are quantifiable and replicable methodologies, such as mercury inventory or regression. So, while quantitative methods typically engender hard numbers and solid data-points, qualitative methods are generally more fluid and interpretive, allowing researchers to explore the context of whatever information they collect or elicit. The amalgamation of both the methods would help in gaining a comprehensive understanding of the processes being studied and its significance (Aria & Cuccurullo, 2017).

TABLE V FREQUENCY MATRIX OF INFORMASI ANALYSIS TECHNIQUES

Analysis Method	Approach	Frequency of Use	
Descriptive Statistical Analysis	Quantitative	50	
Regression Analysis	Quantitative	45	
Analysis of Variance (ANOVA)	Quantitative	30	
Correlation Analysis	Quantitative	25	
Factor Analysis	Quantitative	20	
Analysis of Contents	Qualitative	40	
Analysis of narratives	Qualitative	35	
Analysis of Themes	Qualitative	30	
Cluster Analysis	Quantitative	15	
Discriminant Analysis	Quantitative	10	

As observed in Table V, quantitative methods are more frequently used than qualitative ones. The most commonly used methods are Descriptive Statistical Analysis and Regression Analysis, with corresponding frequencies of fifty and forty-five. This indicates the general acceptance of these techniques in communicating relationships between all possible pairs of variables in numerical data. This is in line with the movement of research where descriptive statistics are used to glean insight from data and regression is built to model and quantify cause-and-effect. Similarly, the fact that ANOVA and Correlations were used thirty times and twenty times respectively highlights how conventional comparative and relational tools are informative in quantitative research.

Instead, nearly as often we employ qualitative methods: Content Analysis and Narrative Analysis 40 times and 35 times respectively. This shows that despite their decreased usage in comparison to quantitative methods, qualitative strategies still have an important qualitative part to play within research — particularly when attempting to gain a rich insight into non-numeric data. Frequently used method of data analysis is Thematic Analysis which focuses on the discovery of pattern within qualitative data. This alternative is frequently 30 times carried out. With this approach, deep insights into the viewpoints, experiences and background of the research participants are gained. To summarize this table shows the use of multiple analytics methods in the research, demanding deep quantification combined with full qualitative interpretation.

CONCLUSIONS: This systemic literature review, Application of augmented reality (AR) technology in different areas is extremely useful and valuable character developing among students and young users (Wu et al., 2022) Relevance for patient care HOUSE J. In this research by (2022) it is conducted; Implementing augmented reality in intensive Chinese instruction to develop patience for Self-directed learning corporate discipline into students. The findings suggest that the interactive AR method is useful for

stimulating an interest in learning and moulding students as a person, especially with regard to endurance and intrinsic motivation (Wu et al., 2022). Also, later on (Sudipa et al., 2022) suggested more [:-] a [8 10]. AR application of ancient Bali Lontar Prasi which does not only provides an educational experience but also assists the young in shaping cultural characters and morals. Augmented Reality (AR) technology in the culture-based education through research found to be a significant contributor to combing strong personality and traditional value protection in general society (Sudipa et al., 2022). It is for this reason that today, augmented reality aid in cognitive learning and perhaps also contributes to character development by fostering self-control and intensifying cultural identity as have been recently suggested.

Descriptive data exhibited that AR integration in character development has a very improved results, especially using the field of education and training, while statistical analysis suggested the same. Augmented Reality experience, and recent studies demonstrate that using AR can lead to an increase in interactive learning that is optimized to change emotions, beliefs, and behavior. For instance, in the research (Wu et al., 2022) suggested that integrating augmented reality (AR) in teaching Chinese language handicap syllabi may increase the willingness of students to learn and their self-regulation ability which is an important part of the development of character. Conversely (Sudipa et al., 2022). The AR application encourages to retain a strong traditional value, and in cultural preservation that affects their identity construction and morality formation as new futures companions (2022). Other published studies confirm this finding (Vega-Garzón et al., 2022) that have demonstrated AR is a meaningful driver in teaching more challenging concepts that are both conducive to greater understanding and supports resiliency and goal oriented character building. As a result, previous studies express that AR as not only like a technological tool but also acts as a character developer because influence hare the fundamental human values i.e., motivation to maintain progress, resilience, and cultural identity (Vega-Garzón et al., 2022).

Narrative content is analyzed using a descriptive inventory of the sampling technique of augmented reality (AR) for character creation. In nearly all research, participants are selected through either purposive sampling (e. In research conducted by Wu et al. For the study (Chen et al., 2022), the subjects were high school students who participated in a Chinese language radical teaching program that used AR applications. This purposive approach was useful as it allowed the researchers to focus on the most important demographic group based on the aims and objectives of the research, namely the age groups that are expected to demonstrate changes in personality traits by playing Pokémon GO. However, Sudipa et al., (2022). Despite the generalization limitations, employing convenience sampling in this context is crucial to facilitate data collection process, which must be easy and fast. As proven by a recent review at which this research is based on the sampling methodology that it intends to provide an in depth understanding of enhanced reality (AR) and personality development through several studies (Sulaiman et al., 2023). The sampling methods applied are usually methodological relevant and plausible safeguards against bias in the context of the research undertaken. However, however, you will find some limitations appeared when we imagine this further broader sample (Weng, 2022).

IV. CONCLUSIONS

The bibliometric and descriptive content analysis findings provide a comprehensive review of the literature, capable of highlighting research gaps on the use of AR in students, which enables a better understanding of character development. Furthermore, this paper articulates the background information for interested scholars on which papers and sources should be further investigated in shaping students character development so they can focus more clearly when researching augmented reality. Moreover, results from this analysis indicate that a number of countries need to do the Investigations on Augmented Reality (AR) in Character Development. China might serve as a referential point for this study. The use of augmented reality (AR) in constructing student characters can also serve as a means to identify study themes by analyzing research patterns. The application of augmented reality for character development has defined the focus of the study field and research methods. This study limited the research framework on Augmented reality use in character development for students to the Scopus database. Utilising search terms and diverse databases can facilitate the ongoing investigation. The findings of this study could be valuable for other researchers intending to investigate augmented reality (AR) is a utilization in young character development. Furthermore, it is plausible that other scholars will be driven to address the existing study deficiencies with the goal is to enhance the analysis of augmented reality's (AR) effectiveness in shaping students' character.

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