



Systematic Review for Tolerance Character by Integrating Mobile Device

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Abstract

The use of mobile learning in education has increased. In order to understand how to use mobile learning, it is necessary to have a common overview of the research carried out. This systematic review has determined the trend (especially tolerance) of using smartphone apps to learn characters through comprehensive analysis and comprehensive research since 2012. The method used is the random journal Scopus search engine to identify publications related to character learning. The study also uses a data visualization software called VoS Viewer to analyze the results of the underlying network relationships and information. The production trend of character formation. The results showed that only a small portion of personality formation research uses smartphone apps for research. Journal professionals publish less research than interdisciplinary scientific and technical journals. Between scholars and character education researchers to study more closely how their research helps to understand character education issues. As the use of mobile learning continues to grow, more research on the use of mobile technology in all fields and levels of character education will help educators improve their skills in using the technology.

Key Words: Character Education, Tolerance, Mobile Learning, Systematic Review.

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Introduction

The rapid development and availability of information technology has not only improved and affected human life, but also created a new ethical space and a new moral status for those who use it (Dennis & Harrison, 2020). Online communities can influence traditional moral education, especially bringing changes and challenges to the moral development of students (Burr, Taddeo, & Floridi, 2020).

Crompton, Burke, Gregory, & Gräbe, (2016) believe that society should strive to improve students' moral decision-making in cyberspace. This concern stems from the fact that the Internet world is changing so fast that it is difficult to maintain effective laws and regulations regarding online

communities. In addition, the development of new technologies has led to new behaviors such as file sharing, hacking, downloading, and domain name squatting, which has increased the confusion and moral dilemmas of Internet users (Crompton et al., 2016). The problem is in the gray area. A person who finds it difficult to distinguish between good and bad may fall into moral chaos. In addition, the attributes of the Internet (such as anonymity, avatar, and intimacy) inevitably reinforce inappropriate and deviant behaviors, leading to moral misconduct on the Internet (Crompton, Burke, & Gregory, 2017; Salcines-Talledo, González-Fernández, & Briones, 2020; Schwartz, 2017).

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In this case, the traditional character-building methods may not be enough to equip students with the maturity needed to deal with various contradictory and controversial ethical issues in cyberspace. Therefore, it is very important for educators to maintain learners' moral standards and concepts in real society and cyberspace (Schuitema, Dam, & Veugelers, 2008). In addition to educating students on the seriousness of online misconduct and its possible consequences, teachers should also emphasize the need for self-discipline in the online environment. Therefore, character education is very important for online communities and deserves continuous research (Fry & Runyan, 2018).

In order to highlight the specific training needs of role training in the cyber society, this study defines role training as role training related to the unique attributes of cyberspace. This research examines the current theories and implementation of character education, and focuses on teachers' perception of the importance of character education. The virtue of morally impeccable habitual behavior is the core of character formation (Kristjansson, 2021), educators may need to reconsider the meaning of virtue and its importance, especially in unique digital situations. Kontek Educators may need to rethink the meaning and importance of virtue, especially in a unique digital environment. Context (Hedayati-Mehdiabadi, Huang, & Oh, 2020). In fact, this topic is the main goal of this research. After studying the core virtues of character education and discussing teachers' attention to the virtues of character education, the results of this research will provide the basis and guidance for promoting design and the development of app-based role training courses.

New technologies, especially gadgets, can revolutionize learning (Heflin, Shewmaker, & Nguyen, 2017). Learning based on smartphone applications provides learners with new experiences, such as personalized, contextual, and non-personalized learning. Affected by time. Or environmental regulations (Crompton et al., 2017). The research community has shown great interest in exploring the benefits of applied learning in education (Shannon Vallor, 2010). Personality formation is an area of research that has benefited from this research.

Shen, (2004) believes that the character performance of learners in the Internet of Things era are the result of the interaction between people

and the environment. Therefore, as the surrounding environment changes, their personality perception and practice will also change. In the past few decades, technological products have changed people's lifestyles, and interactive behaviors have shaped a new environment for social networks and created new ethical issues. Researchers have explored the use of techniques in character formation; however, no direct attempts have been made to aggregate and generalize these studies. Avraamidou, (2016) pointed out the need to comprehensively synthesize the research results of mobile science learning in order to better understand the relationship between Android learning and character shaping. In this way, researchers can better understand the areas in which research has been conducted and use this knowledge. These efforts will also enable educators to deepen their understanding of how to use Android-based learning to internalize the nature of tolerance. Evaluate their own research learning using robots in tolerance education, and take steps to incorporate their new knowledge into their own practice.

Education can be considered essential for the development of a tolerant society. Akenson (2004) is of the view that the education system is one of the main institutional structures that perpetuate sectarian intolerance. It is through this education sector that tolerance and intolerance are reproduced as a cycle of knowledge and become a sustainable social construction. The education sector becomes increasingly vulnerable when educational policies are not conducive to the promotion of tolerance (Coleman & White, 2011). Curriculum, learning models, teacher quality (Shodiq & Syamsudin, 2019), evaluation standards, and many other educational entities allow intolerance to occur. Thus, the education sector is a medium that determines the social condition of society both now and in the future (Setara Institute, 2016).

Device-based learning is evolving, and tools are improving. There are a few short definitions of device-based learning. The above definition identifies certain rapidly obsolete or technology-centric equipment. For example, in 2005 Traxler defined mobile learning as "any education system where the only or dominant technology is portable." In the past decade, technology has surpassed wearable devices; however, according to this definition, a trend has



evolved to identify the four core structures of device-based learning, such as pedagogy, technical tools, context, and social interaction (Crompton et al., 2017). Consistent with this design, Salcines-Talledo et al. (2020) defines device-based learning as "the process of learning through dialogue between humans and individual interaction technologies in different environments". Therefore, this is the definition chosen in this article.

Since device-based learning is a relatively new research field, there is a lack of research on collective review and analysis of device-based learning research. An important overview of device-based learning in education includes a critical analysis of device-based learning projects by Frohberg, Göth, & Schwabe (2009) which focuses on six criteria: context, control, tools, communication, theme, and purpose. Use the framework to systematically analyze and position mobile learning projects, Frohberg et al. The report stated that they looked at 1,469 publications to analyze 102 publications and found that although mobile devices were mainly used for communication, they found that they had little connection with communication or collaborative research, and most of the research supported beginners. Froberg and others explained that this is possible because it is easy to teach new people on a factual level, and the new knowledge can be measured statistically to check the effectiveness of science education.

The purpose of this study is to collect and examine empirical evidence of learning related to personality internalization using smartphone apps, especially tolerance. Discussion on learning tolerant personality based on smartphone apps.

Method

In this study, researchers conducted a systematic review to provide an unbiased and impartial synthesis and interpretation of findings (Hemingway & Brereton, 2009). The systematic review are identified, select and edit the browser search. The search check of the main browser (Oakley, 2012). The researchers used a lot of information and wrote the coding number for more studies and interpreting results.

The search is based on the tried and tested PRISMA principles (Liberati, Altman, Tetzlaff, Mulrow, & Gøtzsche, 2009). The bibliographic search is carried out using the electronic search database Scopus. Only peer-reviewed scientific journal articles will

be included to ensure the target level. These articles come from electronic research in educational databases, most of which are also indexed by ERIC, EBSCOHOST, ProQuest, Wiley International Science, Elsevier Direct, JSTOR, and Sage Journal Online. Among the journals that focus on Android-based learning and character development, such as the International Journal of Emerging Technologies in Learning, Journal of Mobile Teaching, International Journal of Mobile and Blended Learning, and Journal of Moral Education.

In both the electronic and manual search, the following search terms were used: "character," with "tolerance," "tolerance character," "gadgets," "values education," "smartphone," "ubiquitous learning," "moral education," "blended learning," "value internalization," "mobile learning," "Asynchronous learning," and " digital." This search term is used because it is the most frequently used term when describing android-based learning, character internalization, and character tolerance.

The initial search without data parameters resulted in 3182 articles. Such a large number of results show that search engines have a wide range of interpretations of search engines. A review of the article shows that over time, changes in the meaning of terms have led to inaccurate conclusions. Research on current smart phone usage will shorten the search date by ten years before articles about current smart phone usage appear in the search, which led to the decision to include the 2012 study.

The inclusion and exclusion criteria are listed in Table 1. To be enclosed during this systematic review, every study had to satisfy all the inclusion and exclusion criteria.

Table 1. Inclusion and Exclusion criteria

Inclusion Criteria	Exclusion Criteria
Students using smartphones Character education is the main focus of discussion Smartphone applications have been used in learning Articles available to the public The article is peer-reviewed and has been published in a journal	Smartphone applications are not used on laptops The smartphone app is not used on the tablet



After removing duplicates, articles that did not meet the original standards of smartphone app learning and character tolerance, or articles without peer-reviewed or research articles, 153 articles were accepted for tolerance research and 914 articles were accepted as character education. Violated the inclusion and exclusion criteria of two independent researchers. The coding agreement between the raters is 96%. Discuss, consider, accept or eliminate controversial issues. A total of 49 articles meet all the criteria listed in Table 1.

A systematic review method based on multiple inclusion and exclusion criteria is used to select research that has nothing to do with the purpose, problem, and scope of bibliometric retrieval, as well as policy research publications that are consistently selected in various international journals. Includes the number of years of publication through subscription and open access (2012-2021). This includes books and chapters, editorial reviews, conference reports, industry reports, magazine articles, and industry publications; however, articles such as letters, book reviews, reprints, news articles, editions, notes and bibliography, brief reviews, and conference reviews have been Omitted. Search results do not use geographic or language restrictions. In addition, the second and second groups determined relevant research in accordance with the revision process of the comments and the full text. The third author, although the former has been verified and peer-reviewed based on publication identification, it is limited to publications that focus on character formation research and also include mobile learning. In addition, before developing data extraction templates to extract relevant data that may severely affect the synthesis process, delete duplicate data sets before extraction.

At the end of each search, the filtered results are stored in a separate Scopus tag list for display, classification, and ranking output. Create and view network maps based on the collected data. Published articles use various variables for classification and verification. The author assesses the origin and status of research disciplines, research fields and production models, and political research theoretical knowledge from the perspectives of citation rate, main publications, journals, publication types, countries or regions. A bibliometric survey using the VOS viewer is used to determine the published literature and key network relationships.

Results

The preliminary study was conducted by searching the Scopus database with the keyword “character education” and found 914 related articles, which were searched by title, abstract, and keywords. After being reduced, articles with a range of the last ten years, from 2012 to 2021, with the appropriate number of articles are 96 articles. After reading the article in more detail, it is condensed into 29 articles that match the theme of this research which will be discussed in-depth in this article.

Research on character education published in reputable international journals is still relatively low. The following is a research trend on character education from 2012 to 2021 which is described in figure 1.

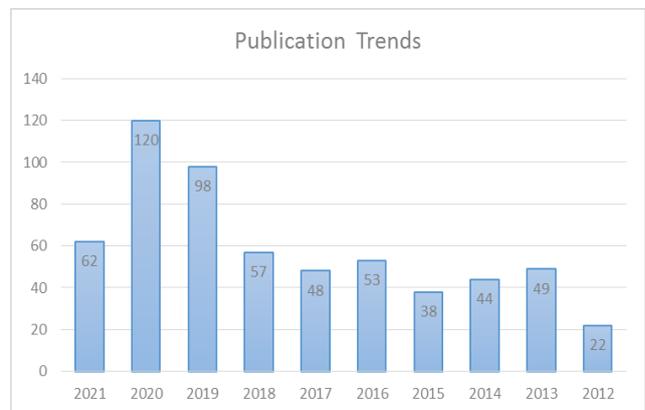


Figure 1. Publication trends in character education research

Geographical Distribution

The research on character education in different magazines is geographically uneven, and some countries have significantly more research than others. About 43% of research on character training is done by American writers. At the same time, Indonesia, as a non-Western country, conducts educational research (one-fifth) much higher than Korean English. This reflects the continuous dedication of the Indonesian Ministry of Education to develop and strengthen character education. 30% of character formation studies were conducted in the United Kingdom, South Korea, Taiwan, Turkey, Canada, Australia, China, and Spain, as shown in Table 2.



Table 2. Country affiliation of authors publishing the most character education research (selected list)

Author country	Number of document character education publication	Proportion of total related Character Education research output (%)
United States	331	43
Indonesia	213	23
United Kingdom	91	12
South Korea	28	4
Taiwan	26	3
Turkey	23	3
Canada	16	2
Australia	15	2
China	14	2
Spain	14	2

Publication Venues

Publications related to character education are dominantly published in the Religious Education journal. This is interesting because the journal takes a character from a religious point of view. 25% of character education publications are the result of conferences, such as those published in the

Journal of Physics Conference Series and IOP Conference Series Earth and Environmental Science. Theories and practical things about character education can be specifically seen in the Journal of Moral Education. In detail, the place of publication can be seen in Table 3 below.

Table 3. Character Education research publications on different international journals (selected list)

Source Title	Number of document character education publication	Proportion of total related Character Education research output (%)
Religious Education	74	26
Journal of Physics Conference Series	55	20
Journal of Moral Education	48	17
Childhood Education	20	7
International Journal of Innovation Creativity And Change	19	7
Handbook of Moral And Character Education	14	5
Iop Conference Series Earth And Environmental Science	13	5
Nassp Bulletin	13	5
Action In Teacher Education	12	4
Universal Journal of Educational Research	12	4

Authorship

The authors publish their articles in different international journals related to character education, such as Kristjánsson, K. [16], Berkowitz, M.Z. [12], Lickona, T. [10]. For more details, it can be seen in figure 2. It is interesting to show that the institution of writers in international journals related to character education is dominated by universities in Indonesia, as described in figure 3.

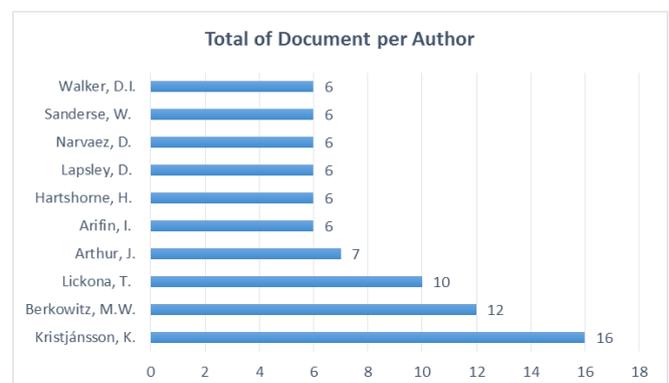


Figure 2. Authors producing most character education publications



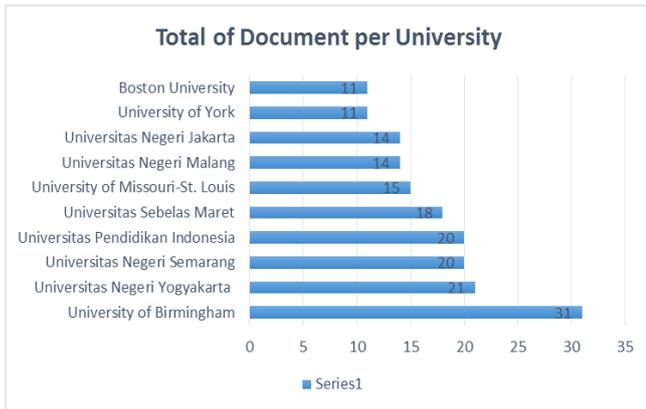


Figure 3. Institutional affiliations of authors producing most character education research publications

Thematic Evolution of Character Education Research

This study categorizes key themes in character education research related to existing theories, with figure 4 showing trends in network analysis that highlight the differences between old and new research courses. This includes a new focus on citizenship, virtue, moral education, values, ethics, civic education, morality, and character education

as the keywords that appear the most. The results of the study in Figure 4 show that in character education research, there are still several opportunities that can be done to conduct further research (such as how character education is taught through e-learning).

Although the analysis of this research shows that most of the character formation research related to school life is an integral part of moral education, for example, school culture and teachers as moral personality are very important to the moral development of students. ... Kohlberg's "just community" moral education method (Kohlberg, 1976) has had a huge impact on the study of school moral atmosphere. This approach focuses on how the school transforms into a democratic moral community and how the moral atmosphere affects morality. In addition to school culture, teachers as moral models and teacher-student interaction also have an important impact on students (Chen, 2007; Lickona, 2004; Nucci, 2004).

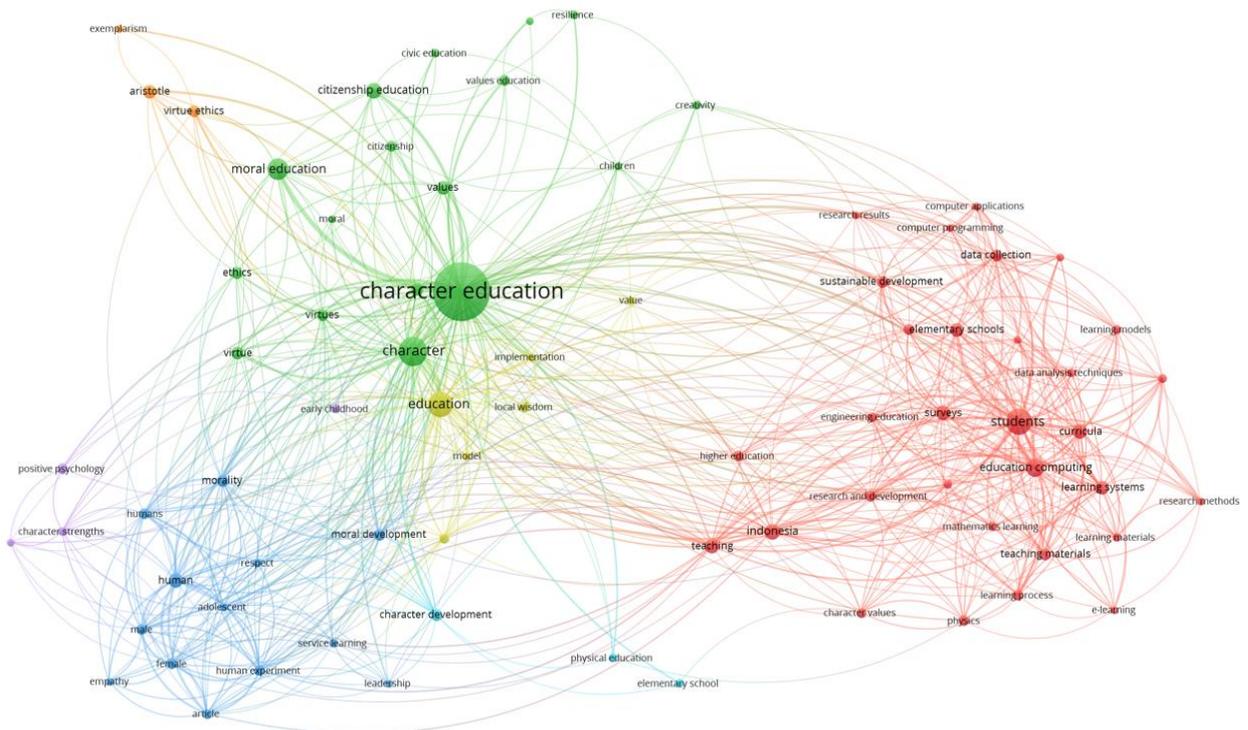


Figure 4. Keyword mapping network in character education in another international journal.

Notes. The graph shows the relationship (at least since the appearance of ADD) to the keywords of the specified author and author index, depending on how often they appear in the same post. Nodes

are links and their keywords. And represents a co-occurring relationship. A larger knot means more repetitive keywords. In recent versions, their colors are usually lighter than the colors that have often appeared in the past.



Discussion

This systematic review is a valuable synthesis of Android-based learning research aimed at promoting tolerance, and provides insights into the breadth, purpose, and breadth of research in this field. Because they expand the knowledge of equipment learning and role modification. In this synthesis, teachers will find valuable resources for integrating mobile learning into the classroom. They can use this knowledge to replicate or extend mobile learning practices in the classroom. In the following sections, each research question will be described and the results will be analyzed.

With the increasing use of mobile devices, this concept has also evolved to make them useful in the learning process (Heflin et al., 2017). The use of mobile technology in education enables educators to reshape teaching and learning. Create a more flexible learning model that allows teachers and learners to access multiple sources of information and transition from an authoritative learning structure to a community-based learning structure (Chang & Chou, 2015; Heflin et al., 2017; Salcines-Talledo et al., 2020; Shannon Vallor, 2010). While educators are exploring how to make the best use of mobility to promote learning, it is important to explore mobile and collaborative learning strategies and how to best combine these strategies to provide learners with an effective learning experience.

With the popularity of wearable technology, teachers are also exploring how to combine mobile devices with collaborative learning environments to improve learning. The problem is that certain use of mobile devices in education can cause students to have a difficult negative view of the tools they use (Coeckelbergh, 2009). Students may also be distracted by the multitasking on the device and distract classmates through the use of technology (Frohberg et al., 2009; Heflin et al., 2017; Kristjánsson, 2021). On the other hand, others report that mobile technology has improved learners' awareness of collaborative learning (Burr et al., 2020). Apps should not make learning the process is complicated (Darnell, Gulliford, Kristjánsson, & Paris, 2019). To this end, teachers use mobile apps and answer systems in the classroom to enable learners to answer the teacher's questions: learning, participation, and actual test results (Engelen, Thomas, Archer, & Van de Ven, 2018; Schrier, 2015; Schuitema et al., 2008). Using this application, teachers can use mobile technology to achieve meaningful learning.

Although many teachers use technology in the classroom, However, the 2013 classroom research review on collaborative computing found that there was a lack of adequate research on modern mobile technology and small groups (Singer, 2013). A 2016 meta-analysis of 110 experimental and quasi-experimental studies published between 1993 and 2013 Studying the impact of mobile device integration on student learning, the results show that the overall effect of using mobile devices for learning is better than desktop computers. Or not using the device at all (Dennis & Harrison, 2020). These authors suggest that when teachers can design the learning process so that the equipment, programs, and/or software match the learning results of the learning process, the use of mobile devices and educational software is usually the most effective.

So, what conditions underlie character cultivation within the digital age? However will educators, particularly lecturers and parents, be helped to hold out this task? In distinction to the intense technological determinists of the past, today' virtue ethicists argue that the trail of technology is certain (Vallor, 2016). In an exceedingly similar vein to a recent refutation of situationism (Alfano, 2016), virtue ethicists acknowledge that whereas the results of technology are powerful, we've got solely a partial capability to alter them in line with the strain of human development. This suggests that educators ought to be inspired to look at digital technologies similar to smartphones, laptops, and tablets as potential 'blank slates' that {may} be redesigned in ways in which encourage virtuous behavior (Vallor, 2010). Whereas we've got seen samples of however these tools can offer the conditions for ethical error, we'd like to listen to the voice of educators in planning future applications in ways in which that promote moral excellence. For example, though the capabilities that today' on-line technologies offer, similar to the power to speak with others anonymously, may increase the chance of immoral behavior, we will devise ways to forestall it.

In addition to influencing technology design, educators ought to specialize in inculcating character virtues and knowledge that facilitate kids become additional crucial and intelligent users of technology itself (Shodiq & Asyafah, 2020). We tend to argue that this can be a obligation for ethical education. Whereas there are totally different approaches to moral education, we advise that cyber-wisdom education should be a part



of a broader school-based approach to Aristotelian-inspired character education.

Character education may be a style of ethical education that focuses on developing virtue as a stable disposition with the aim of advancing mortals (Kristjánsson, 2021). Additionally to its well-documented improvement within the ethics of virtue ethics since the 1950s, this approach is progressively being employed in education, particularly in the UK education system (Arthur, 2019). Though it's now not completely Aristotle, there has recently been growing awareness on the a part of academic establishments that character education encompasses a key role in education and education policy. Despite these efforts, there's very little interest in much applying these educational techniques to the net atmosphere, each in spiritual education, moreover as in additional specialised subjects similar to info and Communication Technology (ICT) or Character education, Social, Health. Filling this gap needs us to assume imaginatively regarding the character traits that today' online environment requires, what this environment can produce, however it triggers bound behaviors, and, most practically, how we will educate consecutive generation of users to thrive in a web environment.

Educating young people in cyber knowledge needs the college system to desperately address this issue. This could be enclosed within the a lot of and fewer formal ethical education offered by faculties. This could be achieved through schools adding cyber-wisdom teaching to existing character education courses. A separate course will make sure that no student leaves school while not realizing that character is important, which every student can apply character in each on-line and offline contexts. Another approach is to integrate a character-related approach through subjects, particularly people who already involve online activities. For example, a revived applied science info could ask for to ensure students not solely study secret writing however additionally learn about guaranteeing technology is developed with virtue in mind. In fact, such Associate in nursing integrated approach could have any advantages within the long-standing time because it can facilitate students to know however technology is styleed during a manner that embeds ethics more closely in the design method (Calvo & Peters, 2014). In creating a case for specific activities that ask for to cultivate cyber wisdom, we tend to acknowledge that there are opportunities,

particularly given the perennial concern about teacher workloads. Furthermore, we recognize that lecturers may have information gaps and do not feel assured teaching victimization new technologies (Dennis & Harrison, 2020) and/or character education (Arthur, 2019). However, given the challenges the net world presents us with, attention on serving to youngsters live a lot of showing wisdom with technology is of utmost importance. To try and do this, area within the info should be found.

Identified Gaps and Future Research

Four gaps within the analysis were known during this systematic review. First, as of 2000, fewer than 20 studies are printed in peer-reviewed journals on the subject of on-line character education. More research is required in this area. Second, most studies manifest itself in higher education. Therefore, further research is needed at different levels of education. Third, in this study, positive outcomes were identified across all studies. Negative results have to be compelled to be rumored in order that researchers, practitioners, and other stakeholders don't repeat failing attempts. Once researchers discuss negative results, they assist inform sensible steps. Fourth, from the studies reviewed, the bulk of researchers target life science. To broaden the understanding of the utilization of mobile devices in character education, it might be helpful for researchers to additionally focus on different fields.

Future research ought to specialise in the gaps known during this study. It's on the far side the scope of this study to analyze the validity and responsibility of research studies. However, future researchers should examine these aspects. In addition, researchers can conduct true experimental research which will provide information and proof on the impact of victimisation mobile learning in character education. This might result in a much better robust[an improved} understanding of the relation of mobile device use and supply more generalizable research results. In addition, research efforts also can explore the simplest approach to using mobile learning in character education.

Limitations

A systematic review of the literature is often a photo of the sector at one purpose in time. Though the literature search could be a rigorous process,



articles might be overlooked. The study was conjointly restricted as a result of the researchers solely reviewed studies printed in English. Another limitation to the current study is that the manner learning outcomes are evaluated and rumored. There's no consistent customary of activity for what constitutes a positive result. Thus, it's tough to draw conclusions supported the reported results.

Conclusion

Of all the devices that may be used for Mobile Learning, Smartphones, despite their limitations, are the best. The potential of those tools should be controlled to make a longtime academic expertise that's enriched by the potential of these tools. During this sense, many authors have seen the importance of operating within the creation of educational programs that result, among educators and student collectives, in ever-changing attitudes in their pre-dispositions towards the event of high-quality teaching and learning activities, that mix cooperation, creativity, and significant construction of data mediate by technology.

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