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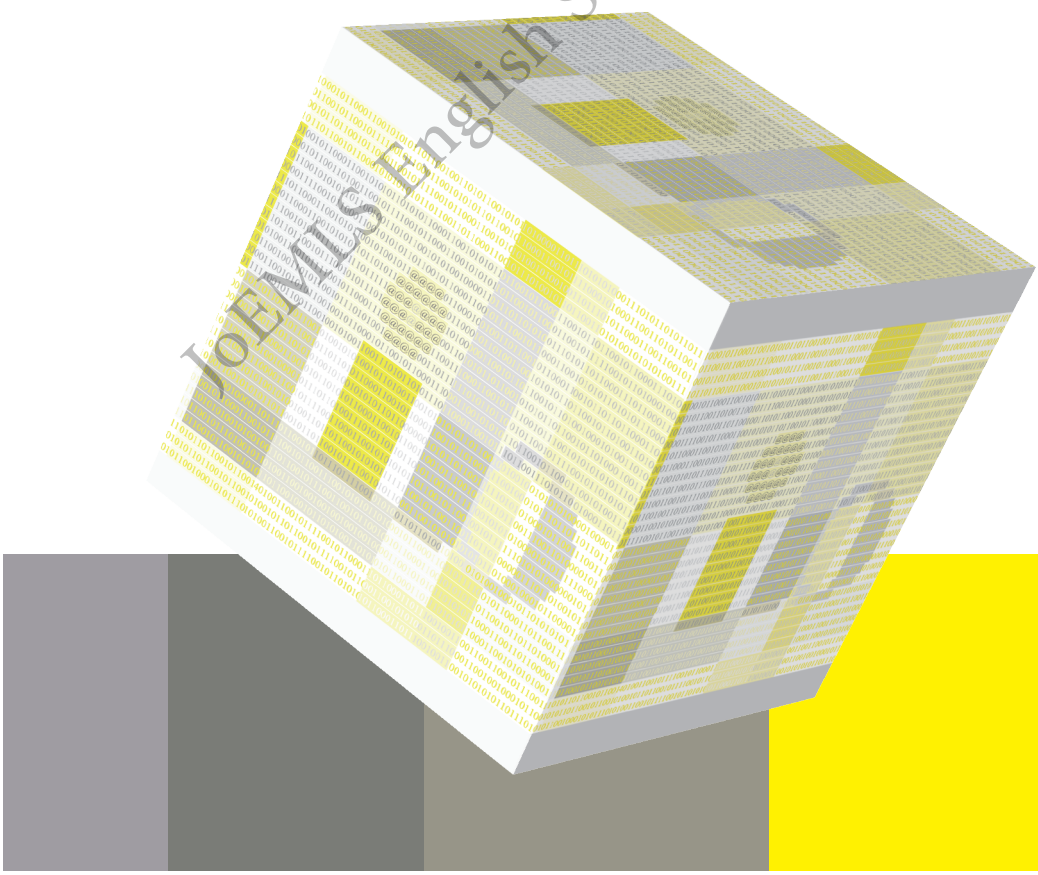

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教育資料與圖書館學，始於1970年3月創刊之**教育資料科學月刊**，其間於1980年9月更名為**教育資料科學**，並改以季刊發行。自1982年9月起易今名。另自2016年11月起，改以一年出版三期（3月、7月、11月）。現由淡江大學出版中心出版，淡江大學資訊與圖書館學系和覺生紀念圖書館合作策劃編輯。本刊為國際學術期刊，2008年獲國科會學術期刊評比為第一級，2015年獲科技部人文社會科學研究中心評定為教育學門專業類一級期刊。並廣為海內外知名資料庫所收錄(如下英文所列)。

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L (Librarianship); **I** (Information Technology); **B** (Bibliophile and the Book trade)

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EDITORIAL

The Application of Interdisciplinary Coexistence in Biblical Bibliotherapy

Many people are unfamiliar with bibliotherapy, not to mention Biblical Bibliotherapy. Bibliotherapy has been applied in the field of librarianship for more than a century in literature review with integrated intelligence used in professional fields of library science and psychological counselling and has demonstrated its unique historic background and value in medical field and devotional institutions.

Biblical Bibliotherapy could be classified under the master category of "bibliotherapy" and is referring to assisting people in sorrow or difficulty to seek comfort, peace and hope or expecting readers/audiences to develop appropriate and well-being with peaceful minds by quoting the *Bible* scriptures and verses. Since Biblical Bibliotherapy involves spiritual nourishment, it is defined with argumentation in consolation and counsel style with multiple layers of skills in annotation and then proceeded to argumentation in sciences, art and even religion to present its distinctive style and claims from those of ordinary books in full. Bibliotherapy is in a much more complicated and diverse book category or bibliography than those topics on leisure or picture books, and requires additional read guidance with theological concerns and counselling to meet the essence and format of annotated bibliography and fulfill the art and effectiveness of consolation and counsel. To better identification, catharsis and insight, Consolation requires empathy and multiple skills, especially in pastoral counseling. It should give readers/audiences with hopes and comfort in mind through reasonable arguments and explanations with discretion except emotional expression and compassion.

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Nevertheless, the provision of bibliotherapy is a traditional but emerging service type by nature, which is rich in history but extremely alternative and alien, as the workload affordability of readers' advisory service in library has always been restricted by manpower, tasks, and insufficiency in professionalism. Except the major barriers of insufficiency in professional loading, the library has more concerns on exceeding its boundary and responsibility to involve in general bibliotherapy or the special Biblical Bibliotherapy. Moreover, it is huge additional loading for the librarians to work on unorganized potential therapeutic books and to collaborate with more professionals to edit the absent annotated bibliography. Therefore, the need of annotated bibliography for Biblical Bibliotherapy is in urgency and a huge project due to following reason: the "books" used in Biblical

Bibliotherapy are not general psychological self-help books nor books which are light in weight, reading and comprehension but highly dependent on appropriate reading guidance from the "helper" in time to bridge the abstruse contents. The helper could be a professional volunteer, a social worker, a patrol, or even a personnel from the local community with theological competence but the first priority is always a librarian with multiple professional competence.

Aforementioned issues could be defined as the needs and imagination to pursue idealization. However, should library information service be excessive rather than conventional or labor intensive? The reality we see today is: nowadays a library is more than a "library" but a phase used for a cultural, educational, recreational, or information institute in creative operation. Library and Information Science (LIS) is undoubted a high-profile academic category of interdisciplinary field of study with featured cross-disciplinary collaboration and multidisciplinary coexistence in research and practice. Contemporary library and information service needs to confront many severe challenges with revitalized bibliotherapy service as one approach to develop alternative route for LIS study and practice.

Biblical Bibliotherapy is at the prime time of paradigm shift in the field of psychological counselling to define competent role and function of readers' advisory service in library as the application and promotion of such Biblical Bibliotherapy is of great potential in the future while the paradigm in psychological counselling shifts towards the open perspectives of literature narrative discourse, emotional experience and spiritual seeking. And thus librarianship has gradually transformed from the provision of passive information service in curation and reference to active integration of external human resource and adjacent professions (e.g., external consultants and experts, information referral, and competence development in librarian) to enhance the overall service capacity in a library. In promoting the application of bibliotherapy or Biblical Bibliotherapy, how could a librarian act as a mind helper by leveraging the information contents from the library collections and co-constructing the personal stories with readers/audiences to help them re-set the scenarios and re-position themselves? Biblical Bibliotherapy is far more complicate than general bibliotherapy as the former mainly applies the narratives and verses from the *Bible* with theological implication to the subjects of correction, restoration, transformation and rebirth by collaborating various relevant competence in attempt to guide and make recommendation.

The "The Effectiveness of Bibliotherapy with the *Bible*: The Emotional Healing Efficacy of Biography and Story of Character in the *Bible* for Christian Undergraduate and Graduate Student" by Chen Su-may Sheih and Sin-Yi Chan

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published in Issue 2, Volume 60 is a very good case study. This article represents the attentions and interests from scholars with different background on this subject. There will be more articles of argumentation and consolation and counsel in the future addressed to the mission in spiritual care or pastoral counseling. Regardless the limitation in public libraries or theological libraries, librarianship will further expand the resource and service of Biblical Bibliotherapy and start a new era of itself.

Jeong-Yeou Chiu
JoEMLS Editor-in-Chief

Editor's Note

Two research papers and one observation report are published in Issue 2, Volume 60, of this journal. Rejection rate of this issue is at 58%. Another research paper "Parent-Child Co-Creation of Story with Augmented Reality" by Lih-Juan ChanLin and the observation report "Guidelines and Best Practices for Extending Conference Papers to Journal Articles: Issues for Consideration from a Research Integrity Perspective" by Chien Chou, are published. All welcome attentive reading and deliberation.

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Research Article

Parent-Child Co-Creation of Story With Augmented Reality[ψ]

Lih-Juan ChanLin

Abstract

The study explores the integration of augmented reality (AR) into parent-child co-creation of AR stories. Beyond traditional oral and written texts, AR stories can be created with diverse use of media. The design process also invites creative thinking among family members. To encourage creativity and narrative skills development among children, a parent-child AR story-creation activity was provided to families. Several research issues were studied: 1. How did the parents and children generate their story ideas and integrate their story ideas into the AR platform? 2. How did parents scaffold children's creation process? 3. What were the obstacles experienced in this form of storytelling, and what did parents and children achieve from the process? Observations and story portfolios were gathered in the study. In-depth interview data were collected from parents and children. Inductive analysis was used for summarizing the research findings. Findings of the study are categorized as the following themes for the creation process: "creating ideas for stories", "immersive storytelling with AR", "parents' scaffolding", "coping with obstacles", and "achieving from experiencing". The integration of AR encouraged children to enjoy the innovative form of storytelling. In future implementations, AR story creation might be tuned to meet individual needs in creating their life stories. Extending AR story creation to a broader scope of subjects and application is also expected.

Keywords: *Parent-child story creation, Augmented reality, Storytelling, Technology-mediated creation, Community engagement*

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Introduction

In recent years, technology integrated into storytelling has attracted much attention. The supporting technologies include network infrastructure, mobile networks, storage, and positioning mechanisms which also potentially contribute to digital storytelling (Nam, 2015). As new digital technology evolves, the

[ψ] The research is also summarized in a brief paper titled "Story-Creation with Augmented Reality" for the presentation of Ed-Media 2023 Conference.

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innovative use of technology has added value to cultivating creativity among children (Carr & Dempster, 2021). Children's interest and involvement in creative thinking can be fostered via the use of playing with technology (Fauzi et al., 2020; Kewalramani et al., 2020). The development of design tools also provides inviting opportunities that allow children to create and tell their own stories in diverse visual design contexts (Cao et al., 2010). Among these tools, Augmented Reality (AR) has gained increased attention.

The advances of AR authoring tools allow creators without programming skills to create interactive AR works accessed by end users (Rumiński & Walczak, 2013). By definition, AR is an enhanced version of the physical world (Ro et al., 2018). AR storytelling uses physical images as a story trigger. When a physical image or object is scanned (triggered) by the camera of a mobile device via the AR application, the augmented content (including visual, audio, and haptic information) can be retrieved for different interactions with viewers. There has been recent growth in AR authoring platforms embedded with design features for creating multimodal sensory experiences for digital storytelling (Nam, 2015). Adapted by parents and schools, diverse AR exploratory activities can be implemented to encourage learning, reading, and thinking (Billinghurst & Duenser, 2012; Billinghurst et al., 2001; Cekaite & Björk-Willén, 2018; ChanLin, 2021).

Much AR research has addressed the impact of reading motivation and learning interest among children or parent-child activities (Akçayır & Akçayır, 2017; Billinghurst et al., 2001; ChanLin, 2018; Cheng, 2017; Danaei et al., 2020). However, there has been limited research on parent-child's adoption of AR as a design tool for story-creation. It is also necessary to understand the process involved in creative thinking in this form of storytelling. Yilmas and Goktas (2017) suggested the use of AR as a creative interface that integrates reality and virtual space for narrating children's stories. Children are invited to become designers and creators in the innovative storytelling activity. Design with AR creates a virtual story space with the use of sound, video, graphics, texts, and other digital content which responds in real time to the audience's actions. Integration of AR into storytelling inspires children's creativity and motivation. In this study, the Blippar AR platform was used as a design tool for parent-child digital storytelling. Joint media engagement was implemented in a university community service for the parent-child population. Along with the process of implementation, several research questions were raised: 1. How did the parents and children generate their story ideas and integrate their story ideas into the AR platform? 2. How did parents scaffold their children's creation process? and 3. What were the obstacles experienced in this form of storytelling, and what did parents and children achieve from the process?

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Literature Review

Storytelling is a means of communication which exploits narration or other forms of message to present meaning and sense to reality. In digital storytelling environment, creativity should be taught to solve novel problems effectively in the digital world (Di Blas, 2022). Children should be provided with opportunity to think new ideas and produce something new using imaginative skills and derive solutions to problems encountered (Chiang et al., 2016). When children are invited to collaborate on digital storytelling, their imaginations are inspired by using available multimodal resources for communication and sharing ideas. They are encouraged to work collaboratively with others and structure the story contents beyond traditional storylines (Di Blas, 2022). In relation to this study's focus, major issues are discussed to address the theoretical underpinnings of this study.

Children's Storytelling

Storytelling is often used for many adaptive functions, such as transmitting information, conveying concepts to persuade values and beliefs, and reflecting upon experiences and thoughts (Bietti et al., 2019; Di Fuccio et al., 2016). In childhood education, storytelling has been considered as an important social activity that fosters children's literacy development (Cekaite & Björk-Willén, 2018). Schools and libraries actively promote a reading environment to encourage reading and storytelling. The creation of a story provides a means to express personal ideas, thoughts, fantasy, and reflections through the creator's story space (Kerry-Moran & Aerila, 2019). Offering individuals opportunities to think creatively via story creation is important.

Providing opportunities for story-creation helps cognitive development and assimilation of personal imagination, thinking skills, and creativity as a part of life-learning experience (Kim & Kim 2018). In Taiwan, the National Library of Public Information has developed Yuan-Moon Garden (an e-storybook database platform) to recruit the public's creation of picture book stories for all ages on an annual basis. Creative resources are gathered and organized to provide children and parents with innovative exploration opportunities (ChanLin, 2021; National Library of Public Information, 2021). In addition to sharing reading resources, encouraging the creation of picture book stories stimulates more creative output; this kind of story creation ability must be cultivated at a young age.

With the popularity of digital information, storytelling can be applied to the digital environment to promote diverse skills development (Felea & Stanca, 2018). The integration of technology into storytelling has been highlighted and applied as a tool in diverse educational settings for enhancing creativity (Kim

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& Kim, 2018). The presentation of digital storytelling combines the art of story design to express the author's voices, identities, and emotions. The design elements include the content of a story and the use of digital media, including texts, images, videos, animations, and music (Kim & Li, 2021).

Children's creation of stories can cover diverse topics, including: children's live stories (Jalongo, 2019), giving voice for increasing well-being (Karlsson et al., 2019), shaping identities (Puroila, 2019), social and emotional worlds (Flynn, 2019), and life stories in the learning of a specific subject (Trakulphadetkrai et al., 2019). From the process of learning digital storytelling, children need to be guided to learn diverse creative telling skills and appropriate use of media for constructing story content to communicate with their audience. These storytelling skills highlight children's ability to personalize their learning experiences, support diversity, gain confidence, and enhance their social and psychological skills (Flynn, 2019; Robin & McNeil, 2019).

To be a good digital storyteller, authors need to give voice to express the connation of a story, and work artistically to create electronic narratives to initiate a physical, personal, emotional, and intellectual or spiritual interaction with readers (Ohler, 2006). Children's story creation needs to be guided by experienced adults to provide a logical narrative structure for a story. In collaboration with their parents, children's emotional involvement and aesthetic experiences can be enriched and enhanced (Cekaite & Björk-Willén, 2018).

Story Creation Tools

With the increasing importance of children's mobile technology use in recent years, many mobile applications for story creation were developed in the past. For example, Toontastic, MyStory, Book Creator, and My Storybook. These popular story design tools provide friendly user interfaces and embedded features to encourage children's thinking and creation of narrations, texts, images, or videos for the story content. The use of these story creation authoring applications with minimal technical requirements is suggested to support the simultaneous use by authors to encourage a dynamic creation process among co-authors (Gómez-Albarrán et al., 2022). By co-creating with their parents, children are encouraged to be good thinkers and storytellers. From parents' guidance, mutual interactions for the thinking process are highlighted. Adults provide the ways in which stories should be told and how human beings organize experiences with the events encountered (Cekaite & Björk-Willén, 2018). The process of creating story content stimulates children's abilities of organization and interpretation, and communication via the use of technology (Kim & Li, 2021).

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With the diverse story creation tools available in the market, it is important to expedite research efforts for the impact of these applications on children's development of multiple literacies. The analysis of how technology is integrated into children's story creation and the phenomenon of children's participation in story creation is needed (Dagenais et al., 2020). From children's personalized perspectives of tools, Kucirkova (2019) suggested several elements for children's creation stories with diverse applications. These elements are necessary to help children develop a sense of authorship, autonomy, authenticity, aesthetics, and attachment. Mediated by parents, the context for learning storytelling entails careful consideration of children's characteristics and personal needs. The storytelling exploratory activities also need to help children make sense of their everyday experiences (Maureen et al., 2018). Since engagement with digital media has become a part of everyday life for children nowadays, it is essential to create opportunities for children to critically engage with innovative use of the media (Cannon et al., 2022).

AR Stories

Recent advances in AR technology have made storytelling more interesting and entertaining. Differing from traditional storytelling, an AR storybook is presented with superimposed text, images, audio, and animation to extend the traditional narrative form of storytelling (ChanLin, 2018, 2021). AR books integrate physical books and synthetic content presented on the screen in a pop-up mode to extend the presentation of the story content (Cheng, 2019). In AR exploratory activities, children are guided to understand the structure of a story and comprehend the in-depth meaning of the story content, which can further enhance children's cognitive development and cultivate required literacy and skills (Danaei et al., 2020).

The design of an AR storybook combines both physical and virtual views of the story content that create a dynamic story space of interactions in storytelling. By adding the layers of virtual media or information, children experience the sensory exploration of AR technology (Kerr & Lawson, 2020; Wu et al., 2013). The AR interface embedded with image recognition techniques can be integrated into story design to enhance sensory interaction via the virtual objects or hidden information in real-life environments. This narrative mode of storytelling is "dynamic" rather than "static". It enriches children's perceptions of visual, auditory, and tactile experiences. With contextual information relevant to what is perceived, AR storytelling has a great impact on children's media experience and literacy development (Kuek, 2020; Squires, 2019).

In diverse learning settings, the application of AR has been used as an innovative pedagogical approach to enhance children's learning (Garzón et al.,

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2020). Immersed in the AR technology, children are provided with affective experiences to engage in meaningful learning (Ponners & Piller, 2020). Literature has suggested that the success of AR intervention relies heavily on pedagogical approach and the scaffolding guidance provided in the implementation (Chanlin, 2021; Cheng, 2019; Garzón et al., 2020). Planning for cognitive engagement in AR activities invites children to think and act via meaningful interaction with the AR story. By relating the physical world with the virtual space, the involvement of the immersive interactions stimulates children's active participation and generates meaningful interpretation, thereby enhancing their motivation and cognitive development (Ponners & Piller, 2020; Scavarelli et al., 2021).

Past research efforts on the use of AR stories among parents and children emphasized the integration of co-play activities with real-world objects or images into storytelling environments to stimulate children's imagination and prediction of a story (ChanLin, 2021; Nam, 2015). From these activities, parents and children are offered exploratory opportunities which can be productive in helping children develop social and literacy abilities (Toh & Lim, 2021). According to the joint media engagement (JME) argument, parents and children share media experiences together in diverse activities via mobile devices, including playing, reading, and learning (Takeuchi & Stevens, 2011). JME has a great impact on parent-child interactions and enhancement of creative thinking among children (Ewin et al., 2021). When parents and children use media to engage in playing, reading, and creating, the shared experiences might help children develop a higher level of thinking skills. Parental mediation of media use also enhances media strategies among children, and enriches parents' and children's experiences of mutual support in cognitive, physical, technical, and affective aspects (Jiow et al., 2017).

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Parent-Scaffolded AR Story Creation

Children's learning of digital storytelling skills needs to be fostered and scaffolded by their families to provide social contexts and experiences to help cultivate the skills and literacy needed for future development (Hébert et al., 2022). Children's narrative skills need to be taught for communicating thoughts and ideas. The narrative structure of storytelling is outlined as the abstract (beginning and summary at the end), the orientation (action and events in the story), complicating actions (telling of what happened), the most unusual aspect of the story, and the coda (linking with the real world; Liskin-Gasparro, 1996).

Integrated with AR technology, stories can be communicated with virtual and real story spaces designed by the authors (Singh et al., 2021). The authors can design, experiment with, and reflect upon the relationship among the elements in both physical and virtual settings for their story content. Many

AR tools provide a diverse thinking path for creating a story. Design of an AR story can be extended to a new story space by audience-based scanning of the real objects and images with a mobile application. The activated augmented story content provides authors with dynamic paths of designing interactions for communications (Nam, 2015). The non-linear structure of the entire storyline can be integrated with the use of the embedded features by AR tools to plan and manipulate diverse branches and ambiences for encouraging interactive experiences (Durairaj & Aurelia, 2017). Telling a story in collaborative activities fosters children imagination and their storytelling skills. The process of collaborative creation (co-creation) also helps them play a participatory role in constructing and presenting the story contents (Hajisoteriou et al., 2022). Children can benefit from the co-creation process of storytelling with their parents to expand their creativity and thinking skills through exploring, communicating, and working with adults throughout the process (Drotner, 2020).

Garzotto et al. (2010) suggested that adult-mediated digital storytelling is not just limited to enabling children with the skills to use media tools. Parents should take part in the co-creation process and provide timely assistance in structuring the creation activities to facilitate learning by doing. From children's use of media for story creation, autonomy and control in the design process is needed to allow children to have an enjoyable learning experience (Nam, 2015). Drotner (2020) identified children's digital content creation into three interlaced categories of production processes: social interaction, semiotic negotiation, and practice-based learning. In the case of the AR digital storytelling space, interactions in co-creation between the children and their parents are dynamic and joyful. The exploration of creation enables a new form of creativity and engagement (Scavarelli et al., 2021). Accompanied by parents, children play around with the technology tools through joyful explorations. From the co-creation process for storytelling, children can benefit from the scaffolding opportunity and strengthen the needed skills for literacy development. They also learn to negotiate with the use of materials in diverse modal properties. Their creation process is regarded as the ability to access, retrieve, understand, evaluate, and use media content. Through production of their media works, children deeply internalize what should be expressed and conveyed (Drotner, 2020).

In many innovative learning approaches in schools, parents play a very important role in guiding their children to explore storytelling activities. Children's ability in telling a story needs to be scaffolded through collaborated activities initiated by adults, especially in a technology-mediated environment, parents' role in the storytelling events is important to help children become

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an active storyteller (Busch et al., 2022). The role of parents' adaptation, involvement, and their perceived value is important for diverse innovative initiates in execution both at home and at school (Dasgupta & Prashar, 2020). The application of creating stories with AR invites young children to become designers and story creators. They are guided to analyze and plan the stories they are going to tell. Switching among different platforms to edit the elements for producing the media needed for their works, children are actively involved in creative thinking and in solving the problems they encounter while performing the complex tasks (Drotner, 2020; Glenn et al., 2020).

The co-creation process between children and parents for accomplishing their created works is worth further study. The process also encourages children's development of "emergent literacy", the literacy that integrates the use of media and technology for functional and meaningful reading and writing experiences in authentic settings (Dasgupta & Prashar, 2020; Parry & Taylor, 2021). Future study focused on the process of collaborative interactions in the social space is needed (Scavarelli et al., 2021). To study children's creativity and development of media literacy, integration of AR into story creation activities opens up a wide range of research interest in observing how children are guided by their parents to reflect on their creation in the social learning space.

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Methodology

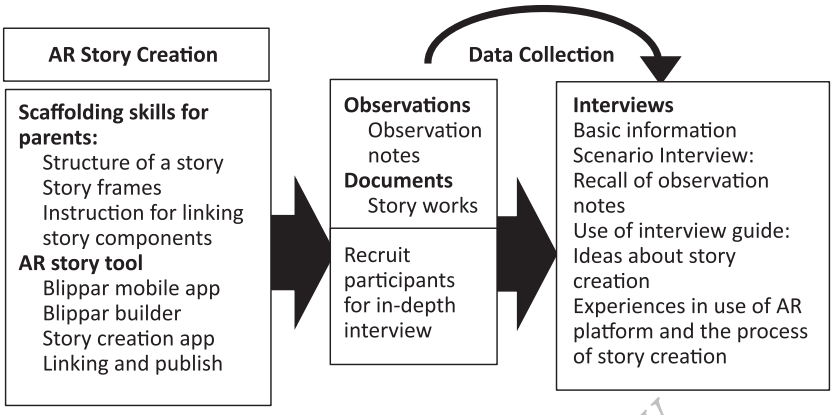
Settings

In this study, the parent-child AR story creation activity was organized by a university in New Taipei City, Taiwan, to engage family support for children's literacy development. The university offered free monthly workshops for parents and children to explore mobile reading and game activities. The parent-child AR story creation was one of the innovative approaches for offering parents and children active creation opportunities. Prior to the workshops, promotional materials were distributed to schools and libraries around New Taipei City area. Families signed up for a date to participate in the workshops.

The procedure for conducting the study is listed in Figure 1. In the workshop, parents were instructed to scaffold children's story creation, including the structure of a story, use of scenarios, design of characters, and linking of story components. Both parents and children learned the use of different tools for the creation task. Data collected in this study included observations conducted during the workshop and interviews carried out after the workshop (Figure 1).

Each workshop lasted for three hours. During the workshop, guidance was provided to parents in how to scaffold children's creation of stories. The story structures suggested by Kerry-Moran and Aerila (2019) were used to provide

Figure 1 Research Procedures



parents with instructions for the use of story themes, backgrounds, settings, elements, and characters. Children and parents were instructed to create artwork using Kid's Doodle, and to tell a story with Tootastic. Before beginning to work on the AR story, they were busy familiarizing and experimenting with the application. It takes roughly 0.5 hours to practice each application.

In AR story creation, several subtasks were instructed for exploration: 1. Download Toontastic to create a story and publish it to YouTube. 2. Use the Kids' Doodle application to create and print out graphic artworks. 3. Use the created artwork as a trigger to produce a Blipp (AR) via Blippar Builder. 4. Test the AR with a mobile device (Figure 2).

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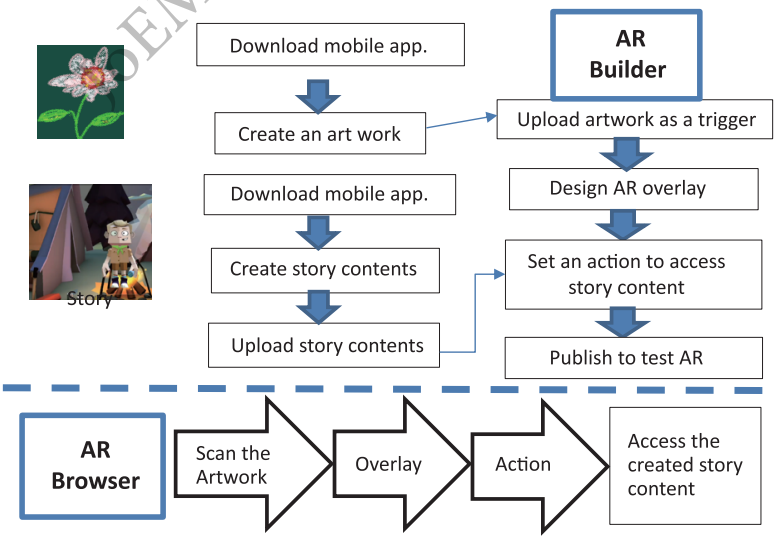
Figure 2 Basic Processes of Creating and Testing AR Story Content



From the process of AR story creation, parents and children worked together to design the interactive AR Blips via Blippar Builder. They also worked collaboratively to explore the use of tools for creating AR stories. A total of eight workshops (labelled by date) of AR story were held in the past academic year (2022). Each workshop included three to seven parent–child pairs, depending on how many parents signed up for a particular date. During AR story creation workshop, training support was provided by the university service team. Parents and children were then invited to in-depth interview on a voluntary basis.

Data Collection and Analysis

In this research, the qualitative approach was used for data collection. Both observation and interview data were collected to explore the processes engaged in by parents and children. From multiple sources of data, narrative analysis was used to reflect the experiences from the participants' perspectives. As suggested by the literature (Josselson & Hammack, 2021; Mihas, 2019), narrative analysis closely examines individuals' "voices" and inspects the form and content of narrative data and explores how these elements serve the storyteller and the story content. In the study, the child's visual mind of the story setting was narrated by the story space that the child experienced (physically or virtually). As an illustration, a girl drew two fish to start her story "The adventure under the sea" (Figure 3). The dialogue between the story's characters: "The merman and jellyfish were seized by the witch... To save them, we must turn off the monitor". The use of "monitor" as a form of monitoring in the actual world was revealed by a child's voice. Her tale portrayed a blend of realism and fantasy.

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Figure 3 Analysis Example of a Story Work

Drwaing by 1127E

A portion of the child's story

As an illustration, a girl drew two fish to start her story "The adventure under the sea". The dialogue between the story's characters: "The merman and jellyfish were seized by the witch... To save them, we must turn off the monitor".

Analysis of her story work

The use of "monitor" as a form of monitoring in the actual world was revealed by a child's voice. Her tale portrayed a blend of realism and fantasy. She retrieved memory events she had experienced. Some of the story ideas also came from what she had heard and watched before. The child's visual mind of the story setting was narrated by the story space that the child experienced (physically or virtually).

Along with the process of story creation, observations of parents' and children's AR story creation processes were recorded. Following each workshop, the observations captured from images and video clips (taken by the researcher) were turned into written descriptions together with photos. Each parent-child pair was given a group number for that particular date. The process of parent-child interactions and descriptions of the kids' works were both included in the descriptions of the observations. In-depth interviews also invited the parent and children pairs sharing of experiences and reflections from the process of AR story creation. The narrative analysis analyses in-depth information about the AR story profiles and goes beyond a simple description of the text to examine the meanings that are communicated through the discourse's structure and content. Participants were invited to describe the process of story creation in different stages, including: design of story settings, characters, scenes, and dialogs, and the use of the AR platform. The interview guide is listed in Table 1. The questions were derived from research questions, as shown in Table 1.

Table 1 Interview Guide

Research question	Category	Interview guide (for parent/child pair)
How did the parents and children generate their story ideas	Participants' basic information	Grade level, gender, farther/mother What were your prior experiences with parent-child storytelling?
	Ideas for creating a story (responded by the parent or the child)	How did you generate the story idea? How did you use the characters and scenes to tell your story? How did you create the plot of your story?
How did they integrate their story ideas into the AR platform	Integration of tools for creating a AR story (responded by the parent or the child)	What were your experiences in learning the use of the tools for creating the AR story? What were the problems you experienced? How did you accomplish the AR story task?
How did parents scaffold children's creation process?	Parental scaffolding (responded by the parent)	How did you help your child to tell the story? How did you help your child to use the tools? How did you discuss with your child during the process of creation?
What were the obstacles experienced, and what did they achieve the task?	Reactions toward the AR story creation (responded by the parent or the child)	What were your reactions toward the experiences of learning AR story creation? How would you apply the skills for future use?

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A total of 20 parent-child pairs participated the in-depth interview. Each interview was conducted on the basis of one parent/one child pair, and lasted for 40 minutes. The children's grade level ranged from 1st to 5th grade. However, the 3rd to 4th graders were the majority. Among them, 10 were girls and 10 were boys. Both children and parents' basic information are listed in Table 2. Interview data collected in the study were transcribed and coded. To label the data sources, "date" and "group name" (A, B, C…) were used as an identification number, followed by the line number of the verbatim transcription (For example, "1123A: 12-14" refers to the activity observed on November 23 from Group A

documented in the verbatim transcription from Lines 12 to 14). Data analysis started with open codes to integrate different data sources (including the artworks, stories, observations, and verbatim interview data). Examples for keywords used in the data are listed in Table 3. Emergent categories resulting from content analysis of the coded data were formed and re-examined for the construction of the observed phenomenon in the study. In grouping the facts and events that shared similarity, multiple angles to interpret the meanings in each category were described. For example, in the early stages of story creation (generating ideas for story creation), parents and children discussed the Tootastic scenes, characters, color, and motion elements. Characters, scenes, design, color, and motion become keywords in their conversations (related to subcategory, Visualization). Their initial discussions also included events from school, family, or various activities (related to subcategory, Life experiences). Some of them also talk about the fantasy of adventures, such as treasure hunts, terror escapes, and rescue missions (related to subcategory, Fantasy).

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Table 2 Basic Information About Participants

Grade level of child	Number	Gender of child	Gender of parent
1st Grader	1	1 Boy	1 Mother
2nd Grader	1	1 Girl	1 Father
3rd Grader	7	2 Boys; 5 Girls	3 Fathers; 4 Mothers;
4th Grader	10	6 Boys; 4 Girls	2 Fathers; 8 Mothers
5th Grader	1	1 Boy	1 Mother
Total	20	10 Boys; 10 Girls	6 Fathers; 14 Mothers

Table 3 Themes Categorized From the Collected Data

Themes	Subcategory	Keywords
Generating ideas for story creation	Visualizations	Characters, Scenes, Design, Color, Motion
	Life experiences	School, Family, Friend, Visit
	Fantasy	Treasure, Escape, Rescue
Immersive storytelling with AR	Creation of art works as AR triggers	Drawings, Doodle arts, and Drawing objects (e.g., myself, jellyfish, princess, Pokemon…)
	Telling stories with the AR tool	Exploring functions, Testing workability
Parents' scaffolding	Familiarizing with applications	Narration help, Recording help, Scanning, Applying account
	Meaningful narrations	Rewording, Comprehensible, Explanation, Structuring story content
	Refining the story works	Consistency, Layout, Appealing, Revision
Coping with obstacles	Barriers to storytelling	Shy to talk, Lack of experience, Insufficient narrative skill, Communication barrier
	Barriers to using tools	Downloading problems, Getting lost, Account problem, Scan problem, Connectivity
Achieving from experiencing	Enjoyment	Impressiveness, Playing with storytelling,
	Positive feelings	Successful outcomes, valuable experience,
	Reflections	Future use, life story, more involvement time

Findings

From the experience of creating AR stories, parents and children learned to use different applications to accomplish their tasks. Using the mobile story creation software, they generated their story ideas from the events and experiences that surrounded them. Learning to use the applications for creating stories encouraged them to be involved in learning innovative approaches in storytelling. However, the task might be challenging to most parents and children, especially for families without any experience of AR. However, accomplishing the story task made parents and children feel enjoyment and satisfaction. Themes of the study are categorized as follows: generating ideas for story creation, immersive storytelling with AR, parents' scaffolding, coping with obstacles, and achieving from experiencing.

IOEMLS English Summary

Generating Ideas for Story Creation

The ideas for children to create stories came from the visualizations triggered by the visual aids supported by the story creation tool. For example, the scene about a pirate ship, a classroom setting, or a camping tent in the forest are visualizations that stimulated children to generate story ideas. These scenes provide children with visualized ideas about their stories. To make the story content integrated with AR elements, children created drawings. When selecting characters and settings for each scene, children also retrieved from their memories events they had experienced in their schools or families. Life experiences and surroundings in their memories were used in the story. These memories were also mixed with imagination for constructing the stories. For example, from the "Monkey and His Friend" by 1023L, monkey and chimpanzee were used as the characters to project the child's interest in the adventure of the forest in the story. In "Pokémon's War against Black Panther" by 0514B, the arguments between Pokémon and Black Panther reflected the child's social life with peers in the school. In "Treasure under the Sea" by 1113A, the hero character, jellyfish, fight against octopus and shark and found the treasure. Some of their ideas also came from stories they had heard and watched before. Reactions to the ideas for story creation are summarized as follows.

Visualizations

Children's ideas about story topics were stimulated by visualized scenes and characters provided in the application. They spent time analyzing the cartoon characters and different scenario settings for relating things in their minds. Some parents helped their children by pointing at the objects in the scenes to help children to recall experiences in their memory (1023L; 0305A; 0305C). They also enjoyed changing the colors and outfits of the selected characters and playing with the animated motions by each character for composing their stories. From

the processes, children were also thinking about the content of their stories. For example, "the blue color kept the shrimp from its predator" was the idea came from a child's mind (1023I). Details of the drawings in the visualized settings also caught children's eyes and initiated story ideas in their minds. They told their stories by elaborating on the drawing details in the setting template. Examples of the reactions are listed as follows.

> When seeing the monkey (the character), he quickly related to many scenes and events in his mind...; In this story, he analyzed the visual details in the settings and came up with the dialogues among the characters. (Mother, 1023L: 37-36, 46-47)
>
> The picture reminded me of a story I had read before. I made a change by turning the crow and fruit into real people. (Boy, 0514C: 63-65)
>
> He started with the marine scene, playing with the characters to nurture inspirations for creating interesting story content. (Mother, 1113A: 24-25)

Prior Experiences

Some of their story ideas were related to their prior experiences. Children got inspiration from current and past events and experiences in their schools and families. Other stories they had read before also became sources for their story content. For example, the story "My Visit to Fu-Jen" (1113G) was a story about the university from a boy's perspective. Examples of the reactions are listed as follows.

> She put her personal life experiences into her story. She liked to use the things she experienced or learned from her school. (Father, 1023A: 205-206)
>
> My story was about a camping trip. My family goes camping in the summer or winter vacations. (Girl, 0423A: 09-10)

Fantasy

Many stories were from children's imagination. They enjoyed inventing their own stories by creating the dialog among the characters. For example, in the stories of "Space Mission" by 0305B and "Adventure under the Sea" by 1127F, the children created fictional stories with fictional characters, space ships, intruders, and predators in diverse story spaces. Based on some of the sci-fi stories they had read and heard of, children constructed storylines for their own stories. Examples of the reactions are listed as follows.

> The computer system of the spaceship was Hacked by two intruders when the two spacemen were busy fixing the mechanical parts of the space ship. (Boy, 0305B: 123-125)
>
> In my story, I chose a shrimp as the main character. I colored him blue, because blue would disguise and protect him from being caught by predators. (Boy, 1023I: 129-130)

JoEMLS English Summary

> The Jellyfish and Dolphin destroyed the monitor. … They escaped to where they lived under the protection of their guardian angel. (Girl, 1127F: 110, 114)

Immersive Storytelling With AR

To immerse their audience in the storytelling activity, children created artworks as the AR triggers to embrace new-fashioned storytelling. These artworks drawn using Doodle were printed and posted on the wall as triggers for their AR stories. The parents applied for a Blippar online account and used Blippar Builder to create AR. From the process of integrating different applications, parents and children collaborated and followed the procedures as instructed. Parents switched their role between learner and teacher to collaborate with their children to complete the story task. Observed parent-child learning behaviors are listed as follows.

Creation of Artworks as AR Triggers

Children were instructed to draw their own art works for AR triggers using the doodle application as the cover page of their AR books. For example, children created drawing for story triggers (Figure 4), *My Breakfast, A Story of Myself,* and *Treasure Hunt.* The artworks created by children served as a visual representation for triggering their stories (Figure 3). When drawing the AR objects, children were also thinking about the details should be included in their stories. For example, a child drew a security gate to start his visit to the university (1113G). Children enjoyed the use of the mobile doodle application to create their artworks. The use of diverse functions from the application allowed them to draw freehand. Examples of the reactions are listed as follows.

JCEMCS English Summary

Figure 4 The Visual Representations Created for Triggering AR Stories

My Breakfast (1127E)

A Story of Myself (1113E)

Treasure Hunt (1113A)

> I drew a security gate for my story "My visit to Fu-Jen" because it was my first impression of the university. (He entered the university in his father's car; Boy, 1113G: 416-417)
>
> The use of the drawing applications encourages children's creativity. He enjoyed playing with the tool to create his own artworks. (Mother, 0305B: 151-152)

Telling the Stories With the AR Tool

Designing the AR stories with Blippar Builder, parents learned to integrate children's artwork and overlay objects as a part of their storytelling works. They also explored the functions for enhancing visual interactions of their AR stories. To ensure that their AR worked successfully, parents switched their roles between a developer and a user to test the Blips they developed. They also went back and forth between the design of the AR work and the scan of the mobile application to test the workability of the AR. When they achieved their task, an overlay object was activated on the top of the artwork, and the story created by the children was accessible (Figure 5). Examples of the reactions are listed as follows.

Figure 5 Testing AR Story by the Mobile Application

JoEML English Summary

> It was exciting to see the dancing shark (overlay image inserted via Blippar by her mother) jumping on the tablet. Mom helped me with the (design) idea. (Girl, 1113D: 278-280)
>
> The doodle drawing needed to go with the AR story. To help my child, I went through all procedures first and organize the artwork and objects. (Mother, 1023L: 108-109)
>
> With the use of the AR tool, the story became dynamic. Creating the story was interesting to my child. The use of apps and AR application made the stories told differently. The learning process was a new experience for us. (Mother, 1113A: 283-286)

Parents' Scaffolding

From the process of story creation, parents played an important role in guiding their children's use of the mobile applications and in helping them tell their own stories mediated by the AR technology. Most parents worked closely

with their children for the steps and procedures to complete the story tasks. For the children with less skill in storytelling, parents needed to help them sequence the events in each scene, work with the oral narrations, and make sense of the story content for comprehensibility. To integrate the story into the AR platform, parents helped their children create artworks and embedded the artworks into the AR as triggers. From working with their AR stories, parents and children discussed and negotiated to improve the quality of their creative works. For example, parents suggested that their children re-draw the objects or characters to make the triggers relevant to their stories. Some parents also gave comments about the layout and the placement of the objects on the screen. The observed scaffoldings are summarized as follows.

Familiarization With the Applications

To work with children to tell the AR story, parental scaffolding was observed in helping children to use the mobile applications and creating story and Doodle content. Although the storytelling application was an English platform, most children did not have any operation difficulties while working with it. Children and parents were engaged in a wide range of digital experiences, including the use of diverse functions provided in three applications, search of digital resources to be included in the design, and putting together the components needed for AR. Examples of reactions are listed as follows.

> I helped him to record the oral narrations. We did not succeed the first time. (Father, 1113D: 175)
>
> I helped her with the story content. She was not ready at the beginning. (Mother, 0305C: 49-50)
>
> She learned to use the settings and the characters to create the story content. I helped her to work with the story movie clip and upload the story contents to YouTube. She enjoyed sharing her story with others. (Father, 1023A: 122-124)
>
> My father helped me search and get the princess (an animated graphics). (Girl, 1113E: 94)

Meaningful Narrations

To support language development, some parents helped their children practice with their stories for the storytelling activities. They spent time guiding their children regarding how a story should be told. The children followed their parents' instructions and engaged in the narrations of the stories and practiced with conversations among characters. Example reactions are listed as follows.

> He used his own words to tell the story. I helped him with the use of storytelling skills, such as introduction, elucidation, transition, and summing-up, to make the story more interesting to others. (Mother, 0305B: 57-59)

JCEMIS English Summary

> I asked him to listen to his recording to make sure that others could understand his story. (Mother, 1113G: 252)
>
> She (the child) had her own story idea in her mind. However, she needed guidance from us to tell her story in a more meaningful way. I helped her to think logically. Much detailed information about the story needed to be added to the narration to make the story clear to others. (Mother, 1127F: 355-358)

Refining the Story Works

Parents helped their children with the AR story by teaching the skills and knowledge they learned from working with the applications and development platform. From their experience with the works, parents actively guided their children to make sense of the processes. For example, some parents helped their children to reflect on what was experienced. For AR integration, some parents reminded their children to create drawings in accordance with the story content. The children also discussed their designs with their parents to achieve their design goals.

> I guided her to think. We discussed a while before selecting an appropriate object as the "AR treasure" (overlay). (Father, 1127E: 204-205)
>
> I reminded her that the object was too big. It would block the whole screen. (A revision was suggested; Mother, 0124A: 183)
>
> I suggested the use of scenarios to help him get inspiration and ideas for creating artworks for the AR triggers. (Mother, 0305B: 94)

Coping With Obstacles

From the process of creating AR stories, some difficulties were observed. Not many families had previous experience of storytelling activities. Children needed to practice their narrative skills to tell their stories. From the process of approaching AR story creations, parents and children deepened their thinking for the entire story creation process. They were involved in the technology-mediated creation. However, some barriers were observed. From the observation of the study, the barriers are summarized as follows.

Barriers to Storytelling

Since most families had very limited experience of co-creating stories, they needed to practice a few times before getting ready to record their stories. Although the story creation application provided characters and scenarios to stimulate their imagination, some children still had difficulty thinking of and organizing the story content by themselves. Some children might even play with the object without recording any voice. However, when parents tried harder to encourage their children to learn, children would be more willing to tell their stories. Examples of barriers are listed as follows.

JoEMLS English Summary

> My child was so shy to tell a story. He did not have the experience of creating a story before (although he enjoyed reading picture books). (Mother, 0305D: 83, 69)
>
> He had ideas about the story, but he had no idea how to put his ideas together into a logical sequence. (Mother, 0514A: 55-56)
>
> Although she was shy, she would be willing to learn. She practiced herself and talked to me. I helped her to overcome the barrier. (Father, 1023A: 180-181)

Barriers to Using the Tools

From the observations, specific platforms of hand-held devices had compatibility problems with the applications for recording and downloading the story with Toontastic. Working with AR, some parents had problems with the process of applying the account. Working with the English interface was challenging to some parents. However, after learning and practicing with the tools, they were able to handle the tools well and successfully complete their story tasks. Examples of barriers are listed as follows.

> We had a problem downloading our story. The application seemed incompatible with my cellphone. (Father, 1113E: 317-318)
>
> I did not feel it was easy to record my voice into the story. (Boy, 0305E)
>
> I had never heard of AR. … It (creating an AR story) was too techy for me. (Mother, 0423A: 150, 181)
>
> I had difficulty working with the English interface. We would not have been able to do it without your help. (Father, 0319A: 72-73)

Achieving From Experiencing

Although they encountered barriers when using the tools, parents and children learned the use of the applications and AR Builder to create AR stories from the approach. Their experiences were challenging. However, every family was able to complete their AR stories. At the end, they were able to show their AR stories and they reacted with enjoyment from the experience. Parents also reflected on what could be applied to the future use of AR technology. To use the AR technology, practicing and applying in their real life was expected. Some parents related the skills to be used with different family and school activities. The achievement of the experiences by parents and children are summarized as follows.

Enjoyment

The use of the storytelling application provided enhancement of visual stimulation and motivation for children to tell their stories. Parents considered that the approach brought inspiration and invited their children to tell stories in their own words. Most parents and children enjoyed having such experiences.

TOJET English Summary

Reactions about their interest toward the use of characters, drawing printouts, and ease of use of applications were reflected in the following examples:

> I was impressed by the characters. I chose one and made changes for my own use. (Girl, 1127E: 345-346)
>
> My favorite part of the activity was printing out my drawing for the story. (Boy, 0514A: 174)
>
> My boy enjoyed working with the Pokémon Go story he created. He continued re-experiencing the activity at home. (Mother, 0514B: 113-114)
>
> The use of applications for drawing and story creation were easy to operate. The created drawing and story gave her a sense of achievement. (Father, 1023A: 132-133)

Positive Feelings About the Experience

Although AR story creation was a challenging task for many families, they considered the story creation process as a valuable experience. Through learning by doing, they became more knowledgeable about the concepts of AR technology and the creation of AR stories. From the experience, children were positive about trying new technology with the storytelling activity. The examples of positive feelings included reconstructing thinking in the creation process, sharing with friends about the achievement, and internal incentive from the learning process, as follows:

> The process (AR story creation) encouraged children to restructure their thinking and express themselves orally. It was helpful for training their skills. (Mother, 0514C: 121-122)
>
> She shared her AR story with her friend the other day. (Father, 1127E: 413-414)
>
> It did take a while to practice and to become familiarized with the interface and to learn the skills for creating an AR story. (Mother, 1127F: 280-281)
>
> It was a great opportunity for children to experience the new technology. From the activity, she learned the skills. (Mother, 1113D: 68-69)

Reflections

From the AR story creation process, parents and children learned the integrated use of different tools to produce their final story works. From the experiences, they also reflected on ideas about AR storytelling activities in future implementation. One of the parents even reviewed and worked with the applications again (at home), and drew a flowchart to help his child visualize the process of designing an AR story. They also reacted to the necessity for

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more time to engage in the process of AR story creation. From a more practical application in the future, parents also expected to integrate AR stories into their life experiences, such as performance arts in schools, life information, and personal stories for children. The examples of their reflections included the opportunity to learn the usable technology, the practices after the workshop, and the skills for connecting future activities as listed.

> Having these experiences helped my child to become familiar with the technology. Since using diverse technology would be the trend for the future, frequent exposure to new technology helped him advance his technology skills. (Mother, 1113G: 641-642)
>
> We did play with the applications and AR builder at home. I drew a flowchart to indicate the procedures to help my child to learn. (Father, 1113E: 157-158)
>
> In the future, we could use the AR applications to connect her art works with life information, such as weather forecast in the class. (Father, 0305A: 61-62)
>
> My daughter joined the Drama club. In the future, I might extend the skills learned to design an AR poster to link the action stills with the drama play for promotional use. (Mother, 1127F: 799-780)

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Discussion

The study explored an innovative approach to storytelling mediated by AR technology. As observed in the study, parents and children generated their story ideas through visualizing the themes provided by the tools and relating the things they had heard or experienced. Children's everyday lives involve diverse contexts that shape their minds and their story spaces. Some of these surrounding contexts became the sources for their story creations. As noted by Zhang et al. (2022), visualizations of these contexts might trigger children's creative minds by relating the pictures and themes to a variety of creative concepts in their stories.

From the process of story creation, children's narrative skills might not be proficient enough to make their stories comprehensible to others. Parental scaffolds played a pivotal role in helping children reflect on how a story should be told. Activities that involve children to think and reflect can promote their imagination and creativity, and build confidence to develop logical sequencing skills (Cullen & Metatla, 2019). Sadka et al. (2018) also commented that parent-child interactions during a collaborative activity can empower children with learning skills, if parents are able to envision their children's mental state and regulate their behaviors. However, it might be challenging for many parents since discrepancies in parent-child communication were observed among families in this study.

Children learn by interacting with their parents in diverse informal activities. The ways children and parents interact in the activities help children's attention, observations, and interpretations (Sobel et al., 2021). As observed in this study, parents and children encountered barriers for storytelling and using the tools. To complete the AR story task, different designed subtasks helped the family members to collaborate on their story works, and to be engaged in the creation process. Parents and children were also encouraged to take actions for problem-solving. With the sources and activities that support children's choices, decision making, and independence, children's interest in creating stories was stimulated. The finding pertains to the concept of agentic design addressed by Kucirkova (2019) which emphasizes the essence of personalized creation tailored and customized to children's needs. The story creates personal connections that are meaningful to individuals. In this study, AR story creation activities encouraged collaborative efforts and mutual interactions among parents and children. The creative collaboration also deepens every aspect of joint effort in digital creations as per Drotner's categorization of media production processes for different levels of integrated learning (Drotner, 2020). Achievements from the collaborative learning processes among children and their parents include: generating ideas for story creation, immersive storytelling with AR, parents' scaffolding, coping with obstacles, and achieving from experiencing.

Myruski and Dennis-Tiwary (2022) observed that parental scaffolding supports children's cognition and emotional development, which can bolster their regulatory abilities in learning activities. Shin et al. (2021) also suggested the design of technology activities should take into consideration the accessibility and sophistication level of technology for encouraging enjoyable shared experiences. Via the AR story creation activities, parents and children started their story topics by visualizing the agentic design of the application and related the story themes and plots with their life experiences and interests for adventure. Parents' scaffolding behaviors were observed among most parents, including helping children operate the tools, instructing how a story should be narrated, and refining their story works. However, the study might have its limitation. The AR story creation experience might not be applicable to all families, though. Other parents preferred a more open-minded approach to accompanying children's creations without providing too many supports. Parental scaffolding behaviors during cooperative tasks may be influenced by daily interactions and shared media experiences between parents and children (Ewin et al., 2021). Further research to examine how parental scaffolding support influences children's creation activities is needed. Also, the quality and quantity of these scaffolding behaviors might impact children's learning

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in collaborative creation activities. Related research to support these arguments is also expected.

Conclusion

This study explored how to engage community families in AR story creation activities by integrating drawing doodle, storytelling tools, and AR platform to invite community families to participate in AR story creation activities. This study shed light on the incorporation of contemporary technologies into parent-child storytelling. Observed themes were categorized into: "creating ideas for stories", "immersive storytelling with AR", "parents' scaffolding", "coping with obstacles", and "achieving from experiencing". The integration of AR into story creation encouraged parents and children to adapt different tools to work with their stories. Both parents and children advanced their knowledge and skills in creating stories and visual design via AR technology. From the interactions in the AR story creation activity, they were engaged in the contexts that enhanced parent-child collaborative relationships. The experiences of creating stories mediated by the AR technology encouraged parents and children to adapt AR storytelling to their everyday lives, and the usage of AR to be more pertinent to specific needs. The implementation of creating AR stories is a promising approach to encourage digital literacy among the family communities. However, further research and development efforts using AR tools to facilitate parents' and children's collaborative creation of AR stories is needed. Future research focusing on parental scaffolding behaviors related to parent-child daily interactions and shared media experiences is suggested. In addition, the use of quantitative approach to study how different variables might influence the parent-child interactions in technology-mediated storytelling actives is also expected in the future research.

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References

Akçayır, M., & Akçayır, G. (2017). Advantages and challenges associated with augmented reality for education: A systematic review of the literature. *Educational Research Review*, *20*, 1-11. https://doi.org/10.1016/j.edurev.2016.11.002

Bietti, L. M., Tilston, O., & Bangerter, A. (2019). Storytelling as adaptive collective sensemaking. *Topics in Cognitive Science*, *11*(4), 710-732. https://doi.org/10.1111/tops.12358

Billinghurst, M., & Duenser, A. (2012). Augmented reality in the classroom. *Computer*, *45*(7), 56-63. https://doi.org/10.1109/MC.2012.111

Billinghurst, M., Kato, H., & Poupyrev, I. (2001). The magicbook - Moving seamlessly between reality and virtuality. *IEEE Computer Graphics and Applications*, *21*(3), 6-8. https://doi.org/10.1109/38.920621

Busch, G., Theobald, M., & Danby, S. (2022). The stories we tell: Stories within family mealtimes. In A. Filipi, B. Thanh Ta, & M. Theobald (Eds.), *Storytelling practices in home and educational contexts: Perspectives from conversation analysis* (pp. 73-92). Springer. https://doi.org/10.1007/978-981-16-9955-9_5

Cannon, M., Connolly, S., & Parry, R. (2022). Media literacy, curriculum and the rights of the child. *Discourse: Studies in the Cultural Politics of Education*, *43*(2), 322-334. https://doi.org/10.1080/01596306.2020.1829551.

Cao, X., Lindley, S. E., Helmes, J., & Sellen, A. (2010). Telling the whole story: Anticipation, inspiration and reputation in a field deployment of telltable. In *Proceedings of the 2010 ACM conference on computer supported cooperative work* (pp. 251-260). Association for Computing Machinery. https://doi.org/10.1145/1718918.1718967

Carr, A., & Dempster, T. (2021). Parent-child interactions during joint engagement with touchscreen technology: A comparison of younger versus older toddlers. *Infant Behavior and Development*, *64*, 101587. https://doi.org/10.1016/j.infbeh.2021.101587

Cekaite, A., & Björk-Willén, P. (2018). Enchantment in storytelling: Co-operation and participation in children's aesthetic experience. *Linguistics and Education*, *48*, 52-60. https://doi.org/10.1016/j.linged.2018.08.005.

ChanLin, L.-J. (2018). Bridging children's reading with an augmented reality story library. *Libri*, *68*(3), 219-229. https://doi.org/10.1515/libri-2018-0017

ChanLin, L.-J. (2021). Augmented reality for supporting adult-child shared reading. *Libri*, *71*(3), 251-265. https://doi.org/10.1515/libri-2020-0130.

Cheng, K.-H. (2017). Reading an augmented reality book: An exploration of learners' cognitive load, motivation, and attitudes. *Australasian Journal of Educational Technology*, *33*(4), 53-69. https://doi.org/10.14742/ajet.2820

Cheng, K.-H. (2019). Parents' user experiences of augmented reality book reading: Perceptions, expectations, and intentions. *Educational Technology Research and Development*, *67*(2), 303-315. https://doi.org/10.1007/s11423-018-9611-0

Chiang, F, Chiu, C., & Su, Z. (2016). Using digital storytelling to enhance elementary school students' creative thinking. In T.-H. Meen, S. D. Prior, A. D. K.-T. Lam (Eds.), *Proceedings of the IEEE international conference on advanced materials for science and engineering (IEEE-ICAMSE 2016), Tainan, Taiwan, 12-13 November 2016* (pp. 505-508). IEEE. https://doi.org/10.1109/ICAMSE.2016.7840183

Cullen, C., & Metatla, O. (2019). Co-designing inclusive multisensory story mapping with children with mixed visual abilities. In *Proceedings of the 18th ACM international conference on interaction design and children* (pp. 361-373). https://doi.org/10.1145/3311927.3323146

Dagenais, D., Brisson, G., André, G., & Forte, M. (2020). Multiple becomings in digital story creation. *Language and Intercultural Communication*, *20*(5), 419-432. https://doi.org/10.1080/14708477.2020.1776309

JOEMLS English Summary

Danaei, D., Jamali, H.R., Mansourian, Y., & Rastegarpour, H. (2020). Comparing reading comprehension between children reading augmented reality and print storybooks. *Computers & Education*, 103900. https://doi.org/10.1016/j.compedu.2020.103900

Dasgupta, M., & Prashar, A. (2020). Does parental co-creation impacts perceived value? A mixed-method study in Indian elementary educational innovations. *Vision: The Journal of Business Perspective, 24*(1), 90-100. https://doi.org/10.1177/0972262919858268

Di Blas, N. (2022). Authentic learning, creativity and collaborative digital storytelling. *Educational Technology & Society*, *25*(2), 80-104. https://www.jstor.org/stable/10.2307/48660126

Di Fuccio, R., Ponticorvo, M., Ferrara, F., & Miglino, O. (2016). Digital and multisensory storytelling: Narration with smell, taste and touch. In K. Verbert, M. Sharples, & T. Klobučar (Eds.), *11th European conference on technology enhanced learning, EC-TEL 2016, Lyon, France, September 13-16, 2016, proceedings* (pp. 509-512). Springer. https://doi.org/10.1007/978-3-319-45153-4_51

Drotner, K. (2020). Children's digital content creation: Towards a processual understanding of media production among Danish children. *Journal of Children and Media*, *14*(2), 221-236. https://doi.org/10.1080/17482798.2019.1701056

Durairaj, M., & Aurelia, P. S. (2017). An adaptive and interactive storytelling system for mobile augmented reality ambiance (aistmar). *International Journal on Recent and Innovation Trends in Computing and Communication*, *5*(7), 792-797. https://doi.org/10.1109/ICCMC.2017.8282645

Ewin, C. A., Reupert, A. E., McLean, L. A., & Ewin, C. J. (2021). The impact of joint media engagement on parent–child interactions: A systematic review. *Human Behavior and Emerging Technologies*, *3*(2), 230-254. https://doi.org/10.1002/hbe2.203

Fauzi, A., Ridwan, T., & Sholihah, P. (2020). Digital literacy as a media to introduce technology for elementary school children. *International Conference on Elementary Education*, *2*(1), 1507-1518.

Felea, C., & Stanca, L. (2018). Digital storytelling for teaching Romanian for academic purposes – An optimal method for developing employability skills? In I. Roceanu (Ed.), *Proceedings of the 14th international scientific conference "elearning and software for education" Bucharest, April 19 - 20, 2018* (Vol. 4, pp. 163-170). CAROL I National Defence University Publishing House. https://doi.org/10.12753/2066-026X-18-238

Flynn, E. E. (2019). Story circles: Supporting boys' social and emotional worlds in school. In K. J. Kerry-Moran & J.-A. Aerila (Eds.), *Story in children's lives: Contributions of the narrative mode to early childhood development, literacy, and learning* (pp. 97-111). Springer. http://doi.org/10.1007/978-3-030-19266-2_6

Garzotto, F., Paolini, P., & Sabiescu, A. (2010). Interactive storytelling for children. In *Proceedings of the 9th international conference on interaction design and children* (pp. 356-359). Association for Computing Machinery. https://doi.org/10.1145/1810543.1810613

Garzón, J., Kinshuk, Baldiris, S., Gutiérrez, J., & Pavón, J. (2020). How do pedagogical approaches affect the impact of augmented reality on education? A meta-analysis and research synthesis. *Educational Research Review*, *31*, 100334. https://doi.org/10.1016/j.edurev.2020.100334

JOEMLS English Summary

Glenn, T., Ipsita, A., Carithers, C., Peppler, K., & Ramani, K. (2020). StoryMakAR: Bringing stories to life with an augmented reality & physical prototyping toolkit for youth. In *Proceedings of the 2020 CHI conference on human factors in computing systems* (pp. 1-14). Association for Computing Machinery. https://doi.org/10.1145/3313831.3376790

Gómez-Albarrán, M., Sarasa-Cabezuelo, A., Sierra-Rodríguez, J.-L., & Temprado-Battad, B. (2022). Authoring and playing interactive fiction with conventional web technologies. *Multimedia Tools and Applications*, *81*, 14705-14747. https://doi.org/10.1007/s11042-021-11316-x

Hajisoteriou, C., Panaou, P., & Angelides, P. (2022). Empowering children to speak up and act on social justice issues: The use of folktales and collaborative storytelling as tools of social imagination. *British Educational Research Journal*, *48*(2), 253-271. https://doi.org/10.1002/berj.3765

Hébert, C., Thumlert, K., & Jenson, J. (2022). # digital parents: Intergenerational learning through a digital literacy workshop. *Journal of Research on Technology in Education, 54*(1), 34-91. https://doi.org/10.1080/15391523.2020.1809034

Jalongo, M. R. (2019). Personal stories: Autobiographical memory and young children's stories of their own lives. In K. J. Kerry-Moran & J.-A. Aerila (Eds.), *Story in children's lives: Contributions of the narrative mode to early childhood development, literacy, and learning* (pp. 11-28). Springer. https://doi.org/10.1007/978-3-030-19266-2_2

Jiow, H. J., Lim, S. S., & Lin, J. (2017). Level up! Refreshing parental mediation theory for our digital media landscape. *Communication Theory*, *27*(3), 309-328. https://doi.org/10.1111/comt.12109

Josselson, R., & Hammack, P. L. (2021). *Essentials of narrative analysis*. American Psychological Association. https://doi.org/10.1037/0000246-000

Karlsson, L., Lähteenmäki, M., & Lastikka, A.-L. (2019). Increasing well-being and giving voice through storycrafting to children who are refugees, immigrants, or asylum seekers. In K. J. Kerry-Moran & J.-A. Aerila (Eds.), *Story in children's lives: Contributions of the narrative mode to early childhood development, literacy, and learning* (pp. 29-53). Springer. https://doi.org/10.1007/978-3-030-19266-2_3

Kerr, J., & Lawson, G. (2020). Augmented reality in design education: Landscape architecture studies as AR experience. *International Journal of Art & Design Education*, *39*(1), 6-21. https://doi.org/10.1111/jade.12227

Kerry-Moran, K. J., & Aerila, J.-A. (2019). Introduction: The strength of stories. In K. J. Kerry-Moran & J.-A. Aerila (Eds.), *Story in children's lives: Contributions of the narrative mode to early childhood development, literacy, and learning* (pp. 1-8). Springer. https://doi.org/10.1007/978-3-030-19266-2_1

Kewalramani, S., Arnott, L., & Dardanou, M. (2020). Technology-integrated pedagogical practices: A look into evidence-based teaching and coherent learning for young children. *European Early Childhood Education Research Journal*, *28*(2), 163-166. https://doi.org/10.1080/1350293X.2020.1735739

Kim, B.-H., & Kim, D.-I. (2018). Development of children's story production system for children creativity improvement. *Wireless Personal Communications*, *98*(4), 3195-3210. https://doi.org/10.1007/s11277-017-5048-8

JoEMLS English Summary

Kim, D., & Li, M. (2021). Digital storytelling: Facilitating learning and identity development. *Journal of Computers in Education*, *8*(1), 33-61. https://doi.org/10.1007/s40692-020-00170-9

Kucirkova, N. (2019). Children's agency by design: Design parameters for personalization in story-making apps. *International Journal of Child-Computer Interaction*, *21*, 112-120. https://doi.org/10.1016/j.ijcci.2019.06.003

Kuek, P. S. (2020). *Interactive augmented reality storybook for early childhood education.* University of Tunku Abdul Rahman, Kampar. http://eprints.utar.edu.my/3816/1/15ACB02865_FYP.pdf

Liskin-Gasparro, J. E. (1996). Narrative strategies: A case study of developing storytelling skills by a learner of spanish. *The Modern Language Journal*, *80*(3), 271-286. https://doi.org/10.1111/j.1540-4781.1996.tb01611.x

Maureen, I. Y., van der Meij, H., & de Jong, T. (2018). Supporting literacy and digital literacy development in early childhood education using storytelling activities. *International Journal of Early Childhood*, *50*(3), 371-389. https://doi.org/10.1007/s13158-018-0230-z

Mihas, P. (2019). Qualitative data analysis. In G. W. Noblit (Ed.), *Oxford research encyclopedia of education*. Oxford University Press. https://doi.org/10.1093/acrefore/9780190264093.013.1195

Myruski, S., & Dennis-Tiwary, T. A. (2022). Observed parental spontaneous scaffolding predicts neurocognitive signatures of child emotion regulation. *International Journal of Psychophysiology*, *177*, 111-121. https://doi.org/10.1016/j.ijpsycho.2022.05.004

Nam, Y. (2015). Designing interactive narratives for mobile augmented reality. *Cluster Computing*, *18*(1), 309-320. https://doi.org/10.1007/s10586-014-0354-3

National Library of Public Information. (2021, July 7). *Picture book database.* https://storybook.nlpi.edu.tw/index.aspx

Ohler, J. (2006). The world of digital storytelling. *Educational Leadership*, *63*(4), 44-47.

Parry, B. L., & Taylor, L. (2021). Emergent digital authoring: Playful tinkering with mode, media, and technology. *Theory Into Practice*, *60*(2), 148-159. https://doi.org/10.1080/00405841.2020.1857127

Ponners, P. J., & Piller, Y. (2020). The reality of augmented reality in the classroom. In R. Z. Zheng (Ed.), *Cognitive and affective perspectives on immersive technology in education* (pp. 51-66). IGI Global. https://doi.org/10.4018/978-1-7998-3250-8.ch003

Puroila, A.-M. (2019). Who am I? Shaping young children's identities through everyday narratives. In K. J. Kerry-Moran & J.-A. Aerila (Eds.), *Story in children's lives: Contributions of the narrative mode to early childhood development, literacy, and learning* (pp. 55-75). Springer. https://doi.org/10.1007/978-3-030-19266-2_4

Ro, Y. K., Brem, A., & Rauschnabel, P. A. (2018). Augmented reality smart glasses: Definition, concepts and impact on firm value creation. In T. Jung & M. C. tom Dieck (Eds.), *Augmented reality and virtual reality* (pp. 169-181). Springer. https://doi.org/10.1007/978-3-319-64027-3_12

Robin, B. R., & McNeil, S. G. (2019). Digital storytelling. In *The international encyclopedia of media literacy* (pp. 1-8). John Wiley & Sons. https://doi.org/10.1002/9781118978238.ieml0056

JoEMLS English Summary

Rumiński, D., & Walczak, K. (2013). Creation of interactive AR content on mobile devices. In W. Abramowicz (Ed.), *Business information systems workshops: BIS 2013 international workshops, Poznań, Poland, June 19-20, 2013, revised papers* (pp. 258-269). Springer. https://doi.org/10.1007/978-3-642-41687-3_24

Sadka, O., Erel, H., Grishko, A., & Zuckerman, O. (2018). Tangible interaction in parent-child collaboration: Encouraging awareness and reflection. In *IDC 2018: Proceedings of the 2018 ACM conference on interaction design and children* (pp. 157-169). Association for Computing Machinery. https://doi.org/10.1145/3202185.3202746

Scavarelli, A., Arya, A., & Teather, R. J. (2021). Virtual reality and augmented reality in social learning spaces: A literature review. *Virtual Reality*, *25*(1), 257-277. https://doi.org/10.1007/s10055-020-00444-8

Shin, J. Y., Rheu, M., Huh-Yoo, J., & Peng, W. (2021). Designing technologies to support parent-child relationships: A review of current findings and suggestions for future directions. *Proceedings of the ACM on Human-Computer Interaction*, *5*(CSCW2), Article 441. https://doi.org/10.1145/3479585

Singh, A., Kaur, R., Haltner, P., Peachey, M., Gonzalez-Franco, M., Malloch, J., & Reilly, D. (2021). Story CreatAR: A toolkit for spatially-adaptive augmented reality storytelling. In *2021 IEEE virtual reality and 3D user interfaces (VR)* (pp. 713-722). IEEE. https://doi.org/10.1109/VR50410.2021.00098

Sobel, D. M., Letourneau, S. M., Legare, C. H., & Callanan, M. (2021). Relations between parent–child interaction and children's engagement and learning at a museum exhibit about electric circuits. *Developmental Science*, *24*(3), e13057. https://doi.org/10.1111/desc.13057

Squires, D. R. (2019). Instructional designs and educational technologies within augmented reality transmedia storytelling: IDET ARTS. In R. M. Branch, H. Lee, & S. S. Tseng (Eds.), *Educational media and technology yearbook* (Vol. 42, pp. 121-128). Springer. https://doi.org/10.1007/978-3-030-27986-8_11

Takeuchi, L., & Stevens, R. (2011). *The new coviewing: Designing for learning through joint media engagement.* The Joan Ganz Cooney Center at Sesame Workshop and LIFE Center.

Toh, W., & Lim, F. V. (2021). Let's play together: Ways of parent–child digital co-play for learning. *Interactive Learning Environments*. Advance online publication. https://doi.org/10.1080/10494820.2021.1951768

Trakulphadetkrai, N. V., Aerila, J.-A., & Yrjänäinen, S. (2019). Bringing mathematics alive through stories. In K. J. Kerry-Moran & J.-A. Aerila (Eds.), *Story in children's lives: Contributions of the narrative mode to early childhood development, literacy, and learning* (pp. 199-225). Springer. https://doi.org/10.1007/978-3-030-19266-2_11

Wu, H.-K., Lee, S. W.-Y., Chang, H.-Y., & Liang, J.-C. (2013). Current status, opportunities and challenges of augmented reality in education. *Computers & Education*, *62*, 41-49. https://doi.org/10.1016/j.compedu.2012.10.024

Yilmaz, R. M., & Goktas, Y. (2017). Using augmented reality technology in storytelling activities: Examining elementary students' narrative skill and creativity. *Virtual Reality*, *21*(2), 75-89. https://doi.org/10.1007/s10055-016-0300-1

JoEMLS English Summary

Zhang, C., Yao, C., Wu, J., Lin, W., Liu, L., Yan, G., & Ying, F. (2022). *StoryDrawer: A child–AI collaborative drawing system to support children's creative visual storytelling.* In S. Barbosa, C. Lampe, C. Appert, D. A. Shamma, S. Drucker, J. Williamson, & K. Yatani (Eds.), *CHI '22: Proceedings of the 2022 CHI conference on human factors in computing systems* (Article 311). Association for Computing Machinery. https://doi.org/10.1145/3491102.3501914

JoEMLS English Summary

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Research Article

The Effectiveness of Bibliotherapy With the *Bible* — The Emotional Healing Efficacy of Biography and Story of Character in the *Bible* for Christian Undergraduate and Graduate Student[ψ]

Chen Su-may Sheih[a*] Sin-Yi Chan[b]

Abstract

This study involved the application of bibliotherapy with the Bible. The researchers deployed semi-structured in-depth interviews with 12 Christian undergraduates and graduate students from National Taiwan University. This study evaluated the emotional healing efficacy of the Bible by examining the emotional healing processes of identification, catharsis, and insight, and this paper focus on the biographies and stories of characters in the Bible. The findings showed that biographies and stories of characters in the Bible could provide a full process of emotional healing efficacy for Christians who suffer from such emotional disturbance as self-identity problems, struggling with their future careers, and feeling ashamed of their religious beliefs. Those characters are Abraham, Joseph, Moses, Samson, Ruth, David, Elijah, Esther and Mordecai, Job, Daniel, Hosea and Gomer, Jonah, Jesus, Mary (mother of Jesus), Peter, Mary Magdalene, Martha, and Stephen.

Keywords**:** *Bible, Bibliotherapy, Emotional healing, Christian, Undergraduate, Graduated student*

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SUMMARY

Introduction

This study involved applying bibliotherapy using the *Bible*. Bibliotherapy is the practice of using reading materials to help individuals address emotional

ψ This article were collaboratively revised and finalized by two authors, drawing from the research results of Sin-Yi Chan's master thesis entitled "The emotional healing efficacy of the *Holy Bible* for the Christian students of National Taiwan University: An exploratory study" which was supervised by Chen Su-may Sheih.

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disturbances. By engaging with suitable reading materials, individuals can experience the emotional healing process of identification, catharsis, and insight. This process not only soothes their negative emotions but also instills resilience, which is essential for overcoming difficulties.

The *Bible* is a widely used and suitable reading material for bibliotherapy. However, few studies have investigated the effectiveness of bibliotherapy with the *Bible*. Therefore, by examining the emotional healing processes experienced by Christians, this study utilized semi-structured in-depth interviews to evaluate the *Bible*'s efficacy for emotional healing.

Because of limited time and resources, the researchers recruited 12 Christian students from National Taiwan University (referred to as "NTU") who regularly engaged in the *Bible* reading and had experienced emotional healing as a result. This article focuses on the biographies and stories of characters in the *Bible*.

This study aims to help Christian students recognize that biographies and stories can serve as suitable reading materials for emotional healing, enabling them to address emotional disturbances. Furthermore, university counselors, Christian student tutors, pastors, and fellowship leaders can read and discuss specific biographies and stories from the *Bible* with believers experiencing emotional disturbances. This can provide them with adequate support to endure the difficulties in their daily lives.

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Research Method

This study evaluated the effectiveness of bibliotherapy using the *Bible* for Christian students at NTU. Emotional healing processes (e.g., identification, catharsis, and insight) were examined through semi-structured in-depth interviews. This allowed the researchers to explore the participants' feelings and thoughts during the *Bible* reading.

The researchers employed purposive sampling to recruit 12 Christian students from NTU who met the following criteria: 1. Students had been baptized before the interview and either regularly attended a Christian church for worship or were enrolled in a Christian fellowship. 2. They engaged in the *Bible* reading and considered themselves familiar with the entire content of the *Bible* and have read the entire New Testament at least once.

The interview outline for this study was developed based on the research objectives and existing literature on bibliotherapy. The outline consisted of two parts. The first part gathered information about the frequency and duration of the participants' *Bible* reading habits. The second part examined the emotional healing processes of identification, catharsis, and insight. In Part 1, participants were asked to share the most impactful content they had encountered while reading the *Bible*. The researchers inquired about the background of the chosen

passage and the reason it had left a strong impression on them. These questions helped assess the participants' connection with the *Bible* content and confirmed its role in their process of identification. In Part 2, participants were asked if they experienced the emotions of the author or the characters described in the passage and how they felt after reading it. These questions aimed to understand how the participants alleviated negative emotions and underwent catharsis. Finally, participants were asked about how the passage inspired them, exploring the insights they gained from the *Bible*.

Research Findings

The findings revealed that the biographies and stories of 18 characters in the *Bible* could facilitate a comprehensive process of emotional healing for Christian students experiencing emotional disturbances, such as self-identity, career development, and religious beliefs. These characters include Abraham, Joseph, Moses, Samson, Ruth, David, Elijah, Esther and Mordecai, Job, Daniel, Hosea and Gomer, Jonah, Jesus, Mary (mother of Jesus), Peter, Mary Magdalene, Martha, and Stephen. Table 1 provides an overview of the characters in the *Bible* that contribute to the participants' emotional healing process.

Table 1 Characters in the *Bible* That Facilitate Emotional Healing for Participants

	Emotional disturbance of participants	Biblical characters
Problems of self-identity	Feeling guilty for not fulfilling their own responsibilities	Samson
	Facing an unfavorable circumstance and feeling jealous of others	Job
	Feeling anxious and lacking confidence when facing important tasks	Esther and Mordecai
		Jesus
	Feeling distressed because of a lack of understanding of self-worth or being judged from others	Mary (mother of Jesus)
Problems on career development	Feeling uncertain about the future	Abraham
	Feeling frustrated and discontented because of repeated setbacks or lack of recognition	Joseph
	Feeling timid and uneasy about unknown challenges	Moses
	Feeling perplexed and anxious about the current situation	Ruth
	Feeling exhausted and powerless because of an overly busy lifestyle	Elijah
		Martha
Problems related to religious beliefs	Feeling guilty and ashamed for actions that did not align with their own religious beliefs	David
		Hosea and Gomer
		Jonah
		Peter
	Struggling to acknowledge themselves as Christians because of a lack of confidence	Daniel
		Stephen
	Being hesitant to pursue the faith on Christianity because of past mistakes	Mary Magdalene

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Among the participants from NTU, the most frequently mentioned emotional disturbance problems of self-identity were feeling anxious and lacking confidence when facing important tasks. In problems of career development, most participants felt frustrated and discontented owing to repeated setbacks or lack of recognition. In problems related to religious beliefs, two problems were identified: feeling guilty and ashamed for actions that did not align with their own religious beliefs and struggling to acknowledge themselves as Christians because they lacked confidence. The participants most frequently mentioned Biblical characters were Jesus, Joseph, Daniel, and Peter.

First, participants tend to establish a connection between the traits of the *Bible* characters and their own experiences when encountering challenges or suffering. For example, Daniel's commitment to Christianity in Babylon, a country with different religious beliefs and culture, resonates with participants who often face situations where others question their religious beliefs. Despite the cultural differences between the characters and the participants, the focus remains on the characters' shared traits, allowing for a stage of identification.

Secondly, when characters express their emotions clearly during struggles, participants are more likely to experience the same emotions. For instance, the Gospel accounts mention Jesus asking the disciples to pray with him three times before his arrest, indicating his tension and anxiety. Participants reported feeling the same emotions as Jesus when reading these accounts. Additionally, as Christians believe in God's unconditional love, passages describing God's love for humanity, particularly the sacrifice of Jesus to save people from sin, evoke deep emotions and relieve participants of negative feelings.

Finally, when Christian students observe how characters in the *Bible* solve their problems, they can learn from their attitudes and methods. This enables them to strengthen their faith and recognize that God is always with them during difficult times. This not only helps in resolving emotional disturbance problems but also enhances their spirituality and faith in their beliefs.

Based on the findings of this study, the researchers suggest exploring the emotional healing efficacy provided by the *Bible* on different age groups of Christians, such as children, adolescents, adults, and the elderly. Additionally, investigating the effectiveness of bibliotherapy with the *Bible* on non-Christians would be worthwhile. Meanwhile, some participants mentioned that besides the *Bible*, they found solace and could alleviate negative emotions by listening to Christian songs and reading Christian books. Therefore, the efficacy of the emotional healing provided by those materials on Christians may also be worth exploring.

JoEMLS English Summary

References

ROMANIZED & TRANSLATED REFERENCES FOR ORIGINAL TEXT

Hsieh, J.（2022年2月5日）。基督徒應當每天讀聖經嗎？ https://tc.tgcchinese.org/article/daily-bible-reading-necessary【Hsieh, J. (2022, February 5). *Jidutu ying dang meitian du shengjing ma?* https://tc.tgcchinese.org/article/daily-bible-reading-necessary (in Chinese)】

王春展（2004）。台灣地區大學生情緒智慧、憂鬱傾向與情緒調整策略之研究。嘉南學報，*30*，443-460。【Wang, Chun-Chan (2004). A study of the emotional intelligence, depression and emotional regulation strategy of college student in Taiwan. *Chia Nan Annual Bulletin*, *30*, 443-460. (in Chinese)】

王萬清（1997）。讀書治療。心理。【Wang, Wan-Ching (1997). *Dushu zhiliao*. Psychological. (in Chinese)】

伊慶春（主編）（2012）。基督信仰在臺灣：2012年基督信仰與社會研究調查。社團法人中華二十一世紀智庫協會。【Yi, Chin-Chun (Ed.). (2012). *Christianity in Taiwan*. Chunghua 21st Century Think Tank. (in Chinese)】

江淑文（2011）。請跟我一起讀聖經——盧俊義牧師的牧會異象。新使者，*122*，21-25。https://doi.org/10.29949/TNM.201102.0006【Jiang, Shu-Wen (2011). Qing gen wo yiqi du shengjing —— Lu Jun-Yi mushi de muhui yixiang. *Xinshizhe*, *122*, 21-25. https://doi.org/10.29949/TNM.201102.0006 (in Chinese)】

余潔麟（2008年3月29日）。如何讀聖經？水深之處福音網。http://www.luke54.org/view/21/2119.html【Yu, Jie-Lin (2008, March 29). *Ruhe du shengjing?* Luke54. http://www.luke54.org/view/21/2119.html (in Chinese)】

李容珍（2019年11月1日）。為何讀經很久，遇事仍不安？醫師親身經歷談「讀經的心靈療癒」。基督教論壇報。https://ct.org.tw/html/news/3-3.php?cat=12&article=1351608【Li, Rong-Zhen (2019, November 1). Weihe dujing henjiu, yu shi reng buan? Yishi qinshen jingli tan "dujing de xinling liaoyu". *Jidujiao Luntan Bao.* https://ct.org.tw/html/news/3-3.php?cat=12&article=1351608 (in Chinese)】

周慧美（2018）。以聖經經文融入品格教育課程之研究〔未出版之碩士論文〕。國立臺中教育大學區域與社會發展學系國民小學教師在職進修教學碩士學位班。【Chou, Hui-Mei (2018). *The research on blending Bible verses into the course of character education* [Unpublished master's thesis]. The Program of Teachers' Continuing Education, Department of Regional and Social Development, National Taichung University of Education. (in Chinese)】

林信男（2022）。在診療室遇見摩西：精神科醫師帶你探索隱藏在聖經裡的心靈祕密。啟示。【Lin, Xin-Nan (2022). Zai zhenliao shi yu jian Moses: Jingshen ke yishi dai ni tansuo yincang zai shengjing li de xinling bimi. Apocalypse Press. (in Chinese)】

邱炯友（2021年8月17日）。「聖經書目療法」之立論與構思。*JoyoChiu's Pages*。https://joyochiu.page/2021/08/17/聖經書目療法立論構思/【Chiu, Jeong-Yeou (2021). "Biblical bibliotherapy" zhi lilun yu gousi. *JoyoChiu's Pages.* https://joyochiu.page/2021/08/17/%E8%81%96%E7%B6%93%E6%9B%B8%E7%9B%AE%E7%99%82%E6%B3%95%E7%AB%8B%E8%AB%96%E6%A7%8B%E6%80%9D/ (in Chinese)】

IJEMLS English Summary

邱炯友（2023）。聖經書目療法：圖書館的喜樂良藥。道聲。【Chiu, Jeong-Yeou (2023). *Biblical bibliotherapy: A library merry heart makes good medicine.* Taosheng. (in Chinese)】

施常花（1988）。臺灣地區兒童文學作品對讀書治療適切性的研究。復文。【Shi, Chang-Hua (1988). *Taiwan diqu ertong wenxue zuopin dui dushu zhiliao shiqiexing de yanjiu*. Fu Wen. (in Chinese)】

胥弘道（2008）。以聖經為基礎之良善課程對國小五年級學生之影響研究〔未出版之碩士論文〕。東海大學宗教研究所。【Hsu, Hung Tao (2008). *The effect of a kindness course based on the Holy Bible for the 5th grade students* [Unpublished master's thesis]. Institute of Religious, Tunghai University. (in Chinese)】

夏昊靄（2022）。2022台灣基督教會普查報告（二版）。社團法人中華基督教福音協進會。https://trends.ccea.org.tw/article/2022台灣教會普查報告電子版 20230531.pdf【Xia, Hao-Ling (2022). *2022 Taiwan jidu jiaohui pucha baogao* (2nd ed.). Chinese Christion Evangelistic Association. https://trends.ccea.org.tw/article/2022%E5%8F%B0%E7%81%A3%E6%95%99%E6%9C%83%E6%99%AE%E6%9F%A5%E5%A0%B1%E5%91%8A%E9%9B%BB%E5%AD%90%E7%89%8820230531.pdf (in Chinese)】

財團法人董氏基金會（2008）。2008年-大學生主觀壓力源與憂鬱情緒之相關性調查。https://www.jtf.org.tw/psyche/melancholia/survey.asp?This=69&Page=1【John Tung Foundation. (2008). *2008 nian - Daxuesheng zhuguan yali yuan yu youyu qingxu zhi xiangguanxing diaocha.* https://www.jtf.org.tw/psyche/melancholia/survey.asp?This=69&Page=1 (in Chinese)】

張益勤（2022）。登上學業勝利組，卻比以前更憂鬱　頂大生為什麼不快樂？親子天下，*125*。https://www.parenting.com.tw/article/5094269【Zhang, Yi-Qin (2022). Dengshang xueye shengli zu, que bi yiqian geng youyu ding da sheng weishime bu kuaile? *Education·Parenting Family Lifestyle*, *125*. https://www.parenting.com.tw/article/5094269 (in Chinese)】

教育部統計處（2022）。106-8大專校院學生人數－按性別與年齡別分。https://stats.moe.gov.tw/files/gender/106-8.xls【Department of Statistics, Ministry of Education. (2022). *106-8 dazhuan xiaoyuan xuesheng renshu — An xingbie yu nianling bie fen*. https://stats.moe.gov.tw/files/gender/106-8.xls (in Chinese)】

莊雅棠（2008）。書中之書：聖經的價值與影響。圓神。【Zhuang, Ya-Tang (2008). *Shu zhong zhi shu: Shengjing de jiazhi yu yingxiang.* Booklife. (in Chinese)】

陳向明（2002）。社會科學質的研究。五南。【Chen, Xiang-Ming (2002). *Shehui kexue zhi de yanjiu.* Wunan. (in Chinese)】

陳秉華、程玲玲、范嵐欣、莊雅婷（2013）。基督徒的靈性掙扎與靈性因應。教育心理學報，*44*，477-498。https://doi.org/10.6251/BEP.20120504【Chen, Ping-Hwa, Cheng, Lin-Lin, Fan, Lan-Hsin, & Juang, Ya-Ting (2013). Spiritual struggle and coping among Christians. *Bulletin of Educational Psychology*, *44*, 477-498. https://doi.org/10.6251/BEP.20120504 (in Chinese)】

陳書梅（2008）。圖書館與書目療法服務。大學圖書館，*12*(2)，15-41。https://doi.org/10.6146/univj.2008.12-2.02【Sheih, Chen Su-may (2008). Bibliotherapeutic service and the library. *University Library Quarterly*, *12*(2), 15-41. https://doi.org/10.6146/univj.2008.12-2.02 (in Chinese)】

JOEMLS English Summary

陳書梅（2014）。從沉鬱到淡定：大學生情緒療癒繪本解題書目。臺大出版中心。【Sheih, Chen Su-may (2014). *Revive from melancholy: An annotated bibliography of emotional healing picture books for undergraduates.* National Taiwan University Press. (in Chinese)】

陳書梅（2020）。圖書館書目療法服務之推展實務探討。佛教圖書館館刊，*68*，35-51。【Sheih, Chen Su-may (2020). Tushuguan shumu liaofa fuwu zhi tuizhan shiwu tantao. *Information Management for Buddhist Libraries*, *68*, 35-51. (in Chinese)】

陳書梅（2022）。圖書館書目療法服務指引。國家圖書館。【Sheih, Chen Su-may (2022). *Tushuguan shumu liaofa fuwu zhiyin.* National Central Library. (in Chinese)】

陳書梅、張簡碧芬（2014）。小說對大學生之情緒療癒效用研究。教育資料與圖書館學，*51*(2)，293-331。https://doi.org/10.6120/JoEMLS.2013.512/0595.RS.AM【Sheih, Chen Su-may, & Chang Chien, Pi-Fen (2014). A study on emotional healing efficacy of fiction for undergraduate. *Journal of Educational Media & Library Sciences*, *51*(2), 293-331. https://doi.org/10.6120/JoEMLS.2013.512/0595.RS.AM (in Chinese)】

陳書梅、葉瑋妮（2016）。電影的情緒療癒效用研究－以失戀之大學生為例。圖書資訊學刊，*14*(2)，21-57。https://doi.org/10.6182/jlis.2016.14(2).021【Sheih, Chen Su-may, & Yeh, Wei-Ni (2016). A qualitative study on the emotional healing efficacy of movies for undergraduates suffering breakups. *Journal of Library and Information Studies*, *14*(2), 21-57. https://doi.org/10.6182/jlis.2016.14(2).021 (in Chinese)】

陳德倫（2020）。走入優秀和多元競爭力的背光處——被頂大魔咒困住的年輕人們。報導者。https://www.twreporter.org/a/high-academic-achievement-students-psychological-distress-backlight【Chen, De-Lun (2020). Zouru youxiu he duoyuan jingzhengli de beiguang chu — Bei ding da mozhou kunzhu de nianqingrenmen. *The Reporter.* https://www.twreporter.org/a/high-academic-achievement-students-psychological-distress-backlight (in Chinese)】

曾雪瀅（2021年3月25日）。全球基督徒人口最新調查：每三人就有一人是基督徒 東亞急劇增長 中國地下教會成長最快。基督教論壇報。https://ct.org.tw/html/news/3-3.php?cat=11&article=1381723【Zeng, Xue-Ying (2021, March 25). Quanqiu jidutu renkou zui xin diaocha: Mei san ren jiu you yi ren shi jidutu dongya jiju zengzhang zhongguo dixia jiaohui chengzhang zuikuai. *Jidujiao Luntan Bao.* https://ct.org.tw/html/news/3-3.php?cat=11&article=1381723 (in Chinese)】

黃亞琪（2011年4月28日）。30萬大學畢業生的困惑：就業？考研？先延畢再說！Cheers雜誌。http://www.cw.com.tw/article/article.action?id=5005305【Huang, Ya-Qi (2011, April 28). 30 wan daxue biyesheng de kunhuo: Jiuye? Kao yan? Xian yanbi zaishuo. *Cheers.* http://www.cw.com.tw/article/article.action?id=5005305 (in Chinese)】

楊文山（2012）。台灣地區個人與家庭宗教信仰。在伊慶春（主編），基督信仰在臺灣：2012年基督信仰與社會研究調查（頁58-97）。社團法人中華二十一世紀智庫協會。【Yang, Wen-Shan (2012). Taiwan diqu geren yu jiating zongjiao xinyang. In Chin-Chun Yi (Ed.), *Christianity in Taiwan* (pp. 58-97). Chunghua 21st Century Think Tank. (in Chinese)】

廖文櫻（2015）。聖經教學提升國小學童品格之研究：以「關懷」為例〔未出版之碩士論文〕。國立臺北教育大學生命教育教學碩士學位班。【Liao, Wen-Ying (2015). *A study on implementation of Bible teaching to improve elementary students' good characters an example of caring* [Unpublished master's thesis]. Department of Education, National Taipei University of Education. (in Chinese)】

JOEMLS English Summary

賴保禎、張利中、周文欽、張德聰、劉嘉年（1999）。健康心理學。國立空中大學。【Lai, Bao-Zhen, Zhang, Li-Zhong, Zhou, Wen-Qin, Zhang, De-Cong, & Liu, Jia-Nian (1999). *Jiankang xinli xue.* National Open University. (in Chinese)】

謝明彧（2018）。你不知道做什麼工作，才考研究所嗎？遠見。https://www.gvm.com.tw/article/45990【Xie, Ming-Yu (2018). *Ni bu zhidao zuo shime gongzuo, cai kao yanjiusuo ma?* Global Views Monthly. https://www.gvm.com.tw/article/45990 (in Chinese)】

Altunbay, M. (2018). Using literature in bibliotherapy: Biography sampling. *Journal of Education and Training Studies*, *6*(11). https://doi.org/10.11114/jets.v6i11.3593

Baruchson-Arbib, S. (2000). Bibliotherapy in school libraries: A Israeli experiment. *School Libraries Worldwide*, *6*(2), 102-110. https://doi.org/10.29173/slw7087

Cohen, L. J. (1994). Phenomenology of therapeutic reading with implications for research and practice of bibliotherapy. *The Arts in Psychotherapy*, *21*(1), 37-44. https://doi.org/10.1016/0197-4556(94)90035-3

Cornett, C. E., & Cornett, C. F. (1980). *Bibliotherapy: The right book at the right time.* Phi Delta Kappa Education Foundation.

Doll, B., & Doll, C. (1997). *Bibliotherapy with young people: Librarians and mental health professionals working together*. Libraries Unlimited.

Galt, J. M., II. (1853). *Essays on asylums for persons of unsound mind* (Second series). Richmond, Va.; Ritchies & Dunnavant. https://archive.org/stream/39002086343143.med.yale.edu#page/n3/mode/2up

Hynes, A. M., & Hynes-Berry, M. (1994). *Biblio/poetry therapy - The interactive process: A handbook*. North Star Press of St. Cloud.

McDaniel, W. B. (1956). Bibliotherapy: Some historical and contemporary aspects. *ALA Bulletin*, *50*(9), 584-589.

McNicol, S., & Brewster, L. (Eds.). (2018). *Bibliotherapy.* Facet.

Rubin, R. J. (1978). *Using bibliotherapy: A guide to theory and practice*. Oryx.

Shrodes, C. (1950). *Bibliotherapy: A theoretical and clinical-experimental study* [unpublished doctoral dissertation]. University of California.

Stanley, J. (1999). *Reading to heal: How to use bibliotherapy to improve your life*. Element.

Tukhareli, N. (2014). *Healing through books: The evolution and diversification of bibliotherapy*. The Edwin Mellen.

Webb, G. B. (1931). The prescription of literature. *The American Journal of Surgery*, *12*(1), 153-163. https://doi.org/10.1016/S0002-9610(31)90227-4

Weimerskirch, P. J. (1965). Benjamin Rush and John Minson Galt, II: Pioneers of bibliotherapy in America. *Bulletin of Medical Library Association*, *53*(4), 510-526.

JOEMLS English Summary

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Observation Report

Guidelines and Best Practices for Extending Conference Papers to Journal Articles: Issues for Consideration From a Research Integrity Perspective

Chien Chou

Abstract

Results of academic research require publication and need to be reviewed by peers before they can contribute to the existing body of knowledge. Among the various means of publishing research findings, researchers may, according to past academic practices, first present their research results in conferences, seminars or symposiums, and then submit their results to journals for publication. Hence, the issue of "extended publication", where conference papers are revised and submitted to journals, has gained attention in the library and information science community. This study collected public documents on the Internet and applied document analysis to examine the ethical considerations regarding such extension practice. First, this research reviewed the basic principles of research integrity and responsible behavior. Secondly, this research listed several types of violation related to research paper writing and submission, and studied the guidelines established by both domestic and foreign academic organizations, publishers, and journals. The findings of the research were used to provide specific recommendations on the best practices for extending conference papers to journal articles.

Keywords: *Extended publication, Research publication, Conference paper, Journal article, Research integrity*

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SUMMARY

Introduction

Research findings necessitate publication and peer review processes to ensure their dissemination and integration into existing knowledge repositories. In scholarly publishing, it is customary for researchers to initially present their findings at conferences, seminars, or symposiums as a way of sharing their work. Subsequently, they may submit their research findings to journals for

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formal publication. This established practice has garnered the attention of the library and information science community, particularly regarding the concept of "extended publication", which involves the revision of conference papers and their subsequent submission to journals. The question arises whether rewriting or extending a conference paper and submitting it to a journal violates research integrity and submission guidelines. If not, what are the recommended practices in this regard?

This study explores the practices of extended publication through the lens of research integrity. Specifically, this study reviews related principles, regulations and policies outlined in documents from the code, research authority, institutions, publishers, and journals. Furthermore, this study investigates the associated interpretations and implications in the debate regarding concerns about self-plagiarism, text recycling, duplicate publication, and segmented publication. It considers whether submitting extended conference papers to journals aligns with research integrity and submission guidelines while identifying the best practices in this process.

This study utilizes document analysis to examine the ethical implications of extended versions of conference papers. It relies on the principles of research integrity outlined in the 2020 *Taiwan Code of Conduct for Research Integrity* (referred to as the *Taiwan Code*) and the National Science and Technology Council (NSTC) policy to guide the discussion on extended publication and its association with research misconduct. Additionally, it investigates the perspectives of research funding agencies and scientific publishers to assess the feasibility and adaptability of extending conference papers. The research findings inform specific recommendations for best practices in transforming conference papers into journal articles.

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Research Integrity Principles and Regulations: Insights From the Taiwan Code of Conduct for Research Integrity and the National Science and Technology Council Guidelines

The *Taiwan Code* emphasizes the importance of responsible research behavior, highlighting the proper citation of others' and self-contributions. Researchers are expected to accurately attribute and acknowledge sources and their own contributions when citing previously published research materials, data, or arguments. However, extended publication practices carry the inherent risk of self-plagiarism, such as reusing text or including duplicate tables and images without proper citation.

Regarding the ambiguous nature of extended publication, the *NSTC Guidelines for Handling and Investigating Research Misconduct* state that

situations may vary based on the formality of the submission. Conference papers or project reports that do not encompass complete research subjects may be less likely to be regarded as plagiarism. It is important to note that opinions on this issue differ across academic fields. The evaluation of extended publication and its adherence to ethical standards can be influenced by disciplinary norms and practices.

Moreover, it is crucial to consider whether the subsequent articles offer sufficient value to warrant their separation when evaluating extended publications. Each individual article should make a distinct and significant contribution to the field. This ensures that the extended publications are meaningful and contribute to the advancement of knowledge in a comprehensive and distinct manner.

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Regulations and Suggestions for Extended Publication: Insights From International Institutions

This section provides an overview of the extended publication policies of six prominent international research integrity institutions and organizations: the United States Office of Research Integrity (ORI), the Committee on Publication Ethics (COPE), the International Committee of Medical Journal Editors (ICMJE), the Institute of Electrical and Electronics Engineers (IEEE), the Association for Computing Machinery (ACM), and the American Psychological Association (APA).

While most academic institutions allow the extension of conference abstracts for journal submission, regulations regarding other forms of extended publication are not clearly defined. ORI and IEEE generally accept this practice, whereas ICMJE provides more detailed guidelines stating that submissions should not have been previously submitted as full articles. APA emphasizes the importance of avoiding duplicate and piecemeal publication of data.

There is no unified set of rules among these institutions and organizations when extending conference papers into journal articles. They have varying regulations regarding content differences between conference papers and journal submissions. For example, COPE suggests a minimum difference in content of 30%, while ACM recommends a minimum difference of 25%. ORI and APA highlight the risks associated with duplicate words rather than specifying specific percentage differences.

International Publishers' Policy on Extended Publication

Concerning the question of whether conference papers can be transformed into journal papers, the three major publishing houses, Elsevier, Springer, and Wiley, have not explicitly stated their position on this matter. However, they acknowledge extended rewrites of conference "abstracts" for journal

submissions. Regarding conference proceedings, Elsevier and Wiley have provided lists stating certain types of "previously published" articles that should be excluded from acceptance. However, these lists do not include conference abstracts and degree theses, which means that authors can submit these articles for extended publication. It is important to note that while conference abstracts can be expanded into journal articles, full papers in conference proceedings may not be eligible for this transformation.

In disclosing previous conference paper presentations, Elsevier and Springer recommend that authors clarify this information when submitting manuscripts. However, the exact location of this disclosure, whether in the cover letter, within the article's main body, or in the acknowledgment section, is not explicitly specified. This indicates that publishing houses may attach significant importance to the originality of submitted manuscripts to safeguard their interests and maintain academic integrity. Consequently, they may adopt a more conservative stance toward published or presented works. While "conference proceedings" are not extensively discussed, the "previously published" category is often used to determine resubmission eligibility.

It should be noted that these recommendations are provided based on practices observed at Elsevier, Springer, and Wiley. Individual journals within or outside these publishing houses may have their own guidelines and requirements. Additionally, decision-making power seems to be in the hands of the editors-in-chief.

JoEMLS English Summary

Taiwan's TSSCI Journal Policy on Extended Publication

Lin (2019) investigated the policies of Taiwan's TSSCI journals regarding extended publication. The study revealed that approximately 90% of these journals require submitted articles to be original and prohibit prior publication, multiple submissions, and concurrent review by another journal. Guidelines for conference papers vary among journals, with some welcoming such submissions while others mandate rewriting and acknowledgment of the original conference submission. Certain journals do not accept papers previously included in conference proceedings.

Chou et al. (2022) reviewed 110 TSSCI journals and found that only 21 (19.09%) provided explicit guidelines for extended publication. Among these, Seven allowed authors to resubmit conference papers, while six required significant rewriting or approval from the conference organizer. One journal requested that authors indicate prior conference presentations upon manuscript submission, and one required a list of reviewers and session moderators associated with conference papers.

Lin (2019) conducted interviews with chief editors of TSSCI journals to explore their perspectives on extended publication. The majority of editors held a positive attitude toward submitting conference papers to journals and believed that it enhanced efficiency and produced benefits, particularly through effective rewriting. However, practices regarding prior notice of extended conference paper submission varied, and concerns were raised about duplicate submissions with regard to conference proceedings.

Conclusion: Best Practices for Extending Conference Papers Into Journal Articles

The question of whether submitting an extended conference paper to a journal violates research integrity and submission guidelines is not a straightforward matter. It exists along a continuum ranging from acceptable to unacceptable behaviors for extended publications. Expanding conference abstracts and submitting them to journals is generally accepted as a common academic practice without ethical concerns. However, for full articles presented at conferences, their acceptance by journals varies. Moreover, submitting a full article collected in conference proceedings to journals raises considerations of duplicate submissions and augmented publications subject to the policies of journals and publishers.

This study provides recommended practices for submitting extended conference papers to journals with the aim of promoting ethical and responsible research conduct. These practices include familiarizing oneself with research integrity and conferences' policies on extended publication, adhering to formatting guidelines for conference paper submissions, understanding the issue of the reuse of conference proceedings, clearly explaining previous publication status in journal submissions, and evaluating the appropriateness of using conference papers as representative works. Adhering to these practices ensures that researchers align with research integrity and submission guidelines when extending conference papers for journal publication.

JCPMLS English Summary

Acknowledgment

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References

ROMANIZED & TRANSLATED REFERENCES FOR ORIGINAL TEXT

呂昱慧、林雯瑤（2016）。從學術會議論文到期刊論文的延伸出版：以資訊管理領域為例。圖書資訊學刊，*14*(2)，155-179。https://doi.org/10.6182/jlis.2016.14(2).155【Lu, Yu-Hui, & Lin, Wen-Yau Cathy (2016). A study on how conference papers are extended into journal articles in the fields of information management. *Journal of Library and*

Information Studies, *14*(2), 155-179. https://doi.org/10.6182/jlis.2016.14(2).155 (in Chinese)】

呂昱慧、林雯瑤（2018）。會議論文延伸出版為期刊論文其時滯與修改差異之研究：以管理領域為例。教育資料與圖書館學，*55*(2)，139-170。https://doi.org/10.6120/JoEMLS.201807_55(2).0014.RS.BM【Lu, Yu-Hui, & Lin, Wen-Yau Cathy (2018). The differences of publication lag and revisions of conference papers extended publishing to journal articles: In field of management. *Journal of Educational Media & Library Sciences*, *55*(2), 139-170. https://doi.org/10.6120/JoEMLS.201807_55(2).0014.RS.BM (in Chinese)】

周倩、潘璿安（2020）。學術寫作之新倫理議題「自我抄襲」：內涵演進、真實案例、現行規範與預防之道。圖書資訊學刊，*18*(2)，43-72。http://doi.org/10.6182/jlis.202012_18(2).043【Chou, Chien, & Pan, Sophia Jui-An (2020). Self-plagiarism in academic writing: Concepts, cases, regulations, and best practices. *Journal of Library and Information Studies*, *18*(2), 43-72. http://doi.org/10.6182/jlis.202012_18(2).043 (in Chinese)】

周倩、潘璿安、呂瑞蓮（2022）。引領學術研究：臺灣TSSCI期刊發表之學術倫理相關規範初探。圖書資訊學刊，*20*(2)，95-127。https://doi.org/10.6182/jlis.202212_20(2).095【Chou, Chien, Pan, Sophia Jui-An, & Lu, Jui-Lien (2022). Leading academic research: A preliminary study of Taiwan social sciences citation index–Listed journals' policies regarding academic ethics. *Journal of Library and Information Studies, 20*(2), 95-127. https://doi.org/10.6182/jlis.202212_20(2).095 (in Chinese)】

林雯瑤（2019）。學術論文作者之自我抄襲：臺灣TSSCI期刊編輯的觀點。圖書資訊學刊，*17*(2)，35-70。https://doi.org/10.6182/jlis.201912_17(2).035【Lin, Wen-Yau Cathy (2019). Author self-plagiarism in academic articles: Perspectives from TSSCI journal editors. *Journal of Library and Information Studies*, *17*(2), 35-70. https://doi.org/10.6182/jlis.201912_17(2).035 (in Chinese)】

國家科學及技術委員會對研究人員學術倫理規範（2022年7月28日）。https://www.nstc.gov.tw/nstc/attachments/529f05c2-7732-4f02-9c03-803a04bddedf?【Academic Ethics Guidelines for Researchers by the National Science and Technology Council (NSTC). (2022, July 28). https://www.nstc.gov.tw/nstc/attachments/529f05c2-7732-4f02-9c03-803a04bddedf? (in Chinese)】

國家科學及技術委員會學術倫理案件處理及審議要點（2022年8月1日）。https://www.nstc.gov.tw/nstc/attachments/3abf7800-b22d-4ec1-b369-eba7b081153e?【Guidelines for Handling and Investigating Research Misconduct The National Science and Technology Council. (2022, August 1). https://www.nstc.gov.tw/nstc/attachments/3abf7800-b22d-4ec1-b369-eba7b081153e? (in Chinese)】

臺灣研究誠信守則起草委員會（編撰）（2020）。臺灣研究誠信守則。台灣聯合大學系統。https://drive.google.com/file/d/1rSa1ZTdfyjf8aD646ISOfnkUzs11CqeN/view【The Drafting Committee of the Taiwan Code of Conduct for Research Integrity. (Ed.). (2020). *Taiwan code of conduct for research integrity.* University System of Taiwan. https://drive.google.com/file/d/1rSa1ZTdfyjf8aD646ISOfnkUzs11CqeN/view (in Chinese)】

潘璿安（2022）。預印本之特性、出版倫理與其在COVID-19肺炎疫情下的知識傳播影響力。教育資料與圖書館學，*59*(1)，35-71。http://doi.org/10.6120/

JoEMLS English Summary

JoEMLS.202203_59(1).0040.OR.BM【Pan, Sophia Jui-An (2022). The publication ethics of preprints and preprints' influence on knowledge dissemination during the COVID-19 pandemic. *Journal of Educational Media & Library Sciences*, *59*(1), 35-71. http://doi.org/10.6120/JoEMLS.202203_59(1).0040.OR.BM (in Chinese)】

American Psychological Association. (2017). *Ethical principles of psychologist and code of conduct.* https://www.apa.org/ethics/code

American Psychological Association. (2020). *Publication manual of the American Psychological Association* (7th ed.). https://doi.org/10.1037/0000165-000

Association for Computing Machinery. (2018). *Prior publication and simultaneous submissions.* https://www.acm.org/publications/policies/simultaneous-submissions

Cerulo, K. A. (2016). Why do we publish? *The American Sociologist*, *47*(2/3), 151-157. https://doi.org/10.1007/s12108-015-9287-4

Committee on Publication Ethics. (1999). *Guidelines on good publication practice*. https://publicationethics.org/files/u7141/1999pdf13.pdf

Committee on Publication Ethics. (2019). *Text recycling guidelines*. https://publicationethics.org/sites/default/files/Web_A29298_COPE_Text_Recycling.pdf

Committee on Publication Ethics. (2022). *Ethical aspects of conference proceedings*. https://publicationethics.org/resources/forum-discussions/ethical-aspects-conference-proceedings

Elsevier. (2019). *Factsheet: Simultaneous submission*. https://www.elsevier.com/__data/assets/pdf_file/0012/653889/Simultaneous-Submission-factsheet-March-2019.pdf

Elsevier. (n.d.). *Publishing ethics.* https://www.elsevier.com/about/policies/publishing-ethics

Fry, J. (2006). Scholarly research and information practices: A domain analytic approach. *Information Processing and Management*, *42*(1), 299-316. https://doi.org/10.1016/j.ipm.2004.09.004

Fry, J., & Talja, S. (2004). The cultural shaping of scholarly communication: Explaining e-journal use within and across academic fields. *Proceedings of the American Society for Information Science and Technology*, *41*(1), 20-30. https://doi.org/10.1002/meet.1450410103

Green, L. (2005). Reviewing the scourge of self-plagiarism. *M/C - A Journal of Media and Culture*, *8*(5). https://doi.org/10.5204/mcj.2426

Hall, S., Moskovitz, C., & Pemberton, M. (2021). *Understanding text recycling: A guide for researchers*. https://textrecycling.org/files/2021/06/Understanding-Text-Recycling_A-Guide-for-Researchers-V.1.pdf

Hauss, K. (2021). What are the social and scientific benefits of participating at academic conferences? Insights from a survey among doctoral students and postdocs in Germany. *Research Evaluation*, *30*(1), 1-12. https://doi.org/10.1093/reseval/rvaa018

Hersh, G. (2016). *Clarification of our policy on prior publication*. https://www.elsevier.com/connect/editors-update/clarification-of-our-policy-on-prior-publication

Institute of Electrical and Electronics Engineers. (2023). *IEEE publication services and products board operations manual 2023*. https://pspb.ieee.org/images/files/PSPB/opsmanual.pdf

JoEMLS English Summary

Institute of Electrical and Electronics Engineers. (n.d.). *Ethical requirements.* https://journals.ieeeauthorcenter.ieee.org/become-an-ieee-journal-author/publishing-ethics/ethical-requirements/

International Committee of Medical Journal Editors. (2023). *Recommendations for the conduct, reporting, editing, and publication of scholarly work in medical journals*. http://www.icmje.org/icmje-recommendations.pdf

Kim, K., Lee, S. K., Park, H., & Chae, J. (2019). Academic conference analysis for understanding country-level research topics using text mining. *International Journal of Computer Information Systems and Industrial Management Applications*, *11*, 001-016.

Larivière, V., Haustein, S., & Mongeon, P. (2015). The oligopoly of academic publishers in the digital era. *PLOS ONE*, *10*(6), e0127502. https://doi.org/10.1371/journal.pone.0127502

Lin, W.-Y. C. (2020). Self-plagiarism in academic journal articles: From the perspectives of international editors-in-chief in editorial and COPE case. *Scientometrics*, *123*, 299-319. https://doi.org/10.1007/s11192-020-03373-0

Lisèe, C., Larivière, V., & Archambault, É. (2008). Conference proceedings as a source of scientific information: A bibliometric analysis. *Journal of the American Society for Information Science and Technology*, *59*(11), 1776-1784. https://doi.org/10.1002/asi.20888

Martin, B. R. (2013). Whither research integrity? Plagiarism, self-plagiarism, and Coercive citation in an age of assessment. *Research Policy*, *42*(5). 1005-1014. https://doi.org/10.1016/j.respol.2013.03.011

Montesi, M., & Owen, J. M. (2008). Research journal articles as document genres: Exploring their role in knowledge organization. *Journal of Documentation*, *64*(1), 143-167. https://doi.org/10.1108/00220410810844196

National Health and Medical Research Council. (2018). *Guide to managing and investigating potential breaches of the Australian code for the responsible conduct of research*. https://www.nhmrc.gov.au/sites/default/files/documents/reports/guide-managing-investigating-potential-breaches.pdf

Netherlands Code of Conduct for Research Integrity. (2018). https://www.universiteitenvannederland.nl/files/documents/Netherlands%20Code%20of%20Conduct%20for%20Research%20Integrity%202018.pdf

Roig, M. (2015). *Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing* (2nd Rev. ed.). https://ori.hhs.gov/sites/default/files/plagiarism.pdf

Springer. (n.d.-a). *Ethical responsibilities of authors.* https://www.springer.com/gp/editorial-policies/ethical-responsibilities-of-authors

Springer. (n.d.-b). *Publishing ethics for journals.* https://www.springer.com/gp/authors-editors/editors/publishing-ethics-for-journals/4176

STM. (2022). *STM permissions guidelines (2022)*. https://www.stm-assoc.org/intellectual-property/permissions/permissions-guidelines/guidelines-2022/

Wiley. (2023). *Best practice guidelines on research integrity and publishing ethics*. https://authorservices.wiley.com/ethics-guidelines/index.html

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教育資料與圖書館學 學術出版倫理聲明

Version 3

教育資料與圖書館學（以下稱本刊）秉持學術規範與同儕評閱精神，重視投稿論文的嚴謹度外，亦重視學術與出版倫理。JoEMLS網站上的所有資訊都遵循學術出版透明度和最佳實踐原則（*Principles of Transparency and Best Practice in Scholarly Publishing*）中的描述指南。

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⑴ 總主編應決定初步調查方針，並於適當時機尋求執行編輯與編務諮詢委員會成員之建議。
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針對違反學術倫理之情節輕重，已投稿論文將與退稿並撤除，相關撤除之情境，則參據Elsevier政策分為文章撤回（Withdrawal）、文章撤銷（Retraction）、文章移除（Removal）與文章置換（Replacement）等。[1] 並自以下處分項目中，採行一項（含）以上之作業措施：

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[1] 相關說明另見邱炯友，「編者言：期刊稿件倫理爭議處理之思考」，教育資料與圖書館學 53卷，2期（2016年春季號）：135-138。

JoEMLS 註釋（Notes）暨參考文獻（References）羅馬化英譯說明

2015年1月31日修訂

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