



Reviewing the methodology for promoting the awareness of gender equality through ELT materials in industrial revolution 4.0

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Abstract:

In the wake of transformative alterations in the Industrial Revolution epoch, a discernible transition has transpired, heralding a departure from conventional printed instructional resources to a realm dominated by digitalized pedagogical materials. In light of this evolution, the present investigation aspires to delve into a discerning framework tailored to scrutinize the efficacy of educational media crafted to propagate gender egalitarianism. Methodologically, this qualitative inquiry has harnessed the potency of document analysis as a means to amass pertinent data, augmented by the application of content analysis techniques to dissect the amassed information stemming from both traditional print and contemporary digital teaching media. The study's outcomes elucidate an emergent paradigm derived from the pre-existing evaluative framework, delineating a novel trajectory in discerning gender-centric content within didactic materials. In conclusion, the criteria underpinning this evaluative process extend beyond conventional parameters, encapsulating innovative benchmarks such as progressiveness and neutrality, though not circumscribed exclusively to these classifications. This study thus unveils a nuanced perspective, casting a discerning light on the multifaceted facets of evaluating pedagogical materials in the dynamic milieu of digitalized education.

Keywords: *Gender awareness, teaching materials evaluation, digital media, industrial revolution 4.0*

Introduction

The rapid growth of technology and science which leads to the use of artificial intelligence and digitalization marks a new era called Industrial Revolution (IR) 4.0. This phenomenon has a significant impact on education, particularly in the context of Higher Education (HE). The development of knowledge and technology in the era of IR 4.0 requires the university graduates who have English and digital technology literacy.

The target of HE in this era is optimizing technology for accessing information, developing innovations and disseminating ideas.

Some articles reported a number of ideas, studies and innovations that have been conducted in response to the recent changes resulting from the development of technology in this new Industrial era. Hariharasudan and Kot, (2018) for example,

proposed the concept of Digital English and its interconnectedness with education 4.0 for industry 4.0. Furthermore, worldwide emerging issues regarding the education in today's world have been documented in Gleason's (2018) edited book. The IR 4.0 also urges the use of digital technology such as mobile apps for English learning activities. Similar effort shown by Indonesian scholars in response to the new era of IR 4.0 is an introduction to the implementation of new model called SMELT I 4.0 DE for English teaching.

However, to the best of our knowledge, there is no such research conducted in the meantime that examine the media used for teaching in IR 4.0 which can support the ideas of gender equality. Thus, this research has an objective to contribute to the field of English language teaching for tertiary level while proposing a new paradigm for promoting students' awareness on gender equality through English teaching materials based on new direction of curriculum in the 4.0 Industrial Era.

Research Method

This qualitative research focuses on information extracted from the ELT materials used in the university that are relevant for this era. This research, which is conducted in the natural context in order to understand or interpret the social world experienced by the people, uses mainly nonnumeric or qualitative data obtained from the textbooks. This kind of data, which is usually used by interpretive and critical researchers, refers to words, pictures, images or categories in the textbooks. Definition of qualitative research as a study that is 'multi-method in its focus,

involving an interpretive, naturalistic approach to its subject matter'. Furthermore, this research has a characteristic of case study which includes the entire context of a case, including gendered ideas as a product of cultural and social construction reflected on textbooks as facilities to support language learning.

The method employed for data collection is called literature review and document analysis. The collected teaching materials were analyzed using a content analysis method. The analysis of printed and digital documents on internet or social media was conducted in order to invent ideas that are useful for developing new paradigms in teaching gender equality. Regarding the facts that documents can be seen as cultural objects or media that carry social meaning, researchers who use the content analysis method in their study apply the qualitative or interpretive versions of content analysis. Neuman (2006) states that the researcher using the qualitative version of content analysis research, examines not only the content of a text, but also 'the larger context of its creation, distribution, and reception'. Accordingly, the meaning of the content can have different interpretations depending on who is the reader at a certain period of time.

In my research context, the reader is the student who will learn not only the language but also the ideology reflected through the materials. In order to have a deeper understanding of the shift of gender values in English coursebooks, the interpretation of gender portrayals reflected in the written texts and in the symbolic images will not be limited to the content of the textbooks only, but also English teaching resources from internet and digital media. This interpretation

will also consider the dynamics of gender related issues in the Indonesian and worldwide context

Findings and Discussion

In the rapidly evolving landscape of Industrial Revolution 4.0, the imperative to foster awareness of gender equality is more pressing than ever. As educational paradigms adapt to the demands of the digital age, English Language Teaching (ELT) materials play a pivotal role in shaping the perspectives of learners. This review critically examines the methodologies employed in promoting gender equality awareness through ELT materials within the context of Industrial Revolution 4.0. The interplay between language education and societal values is a nuanced terrain, and this investigation delves into the strategies, challenges, and potential transformative impacts associated with integrating gender equality content into ELT materials.

The methodology employed in this review encompasses a comprehensive analysis of existing literature, pedagogical frameworks, and practical implementations. By synthesizing findings from diverse sources, we aim to illuminate the multifaceted dimensions of gender-aware language education in the context of the fourth industrial revolution. The review acknowledges the transformative potential of ELT materials as tools for social change, recognizing the role they can play in challenging and reshaping entrenched gender norms. As technology continues to reshape industries and redefine communication, the importance of equipping learners with gender-inclusive language skills becomes increasingly evident. Through an exploration of methodologies, both theoretical and

practical, this review seeks to identify effective approaches and shed light on areas that warrant further attention.

Discussion of the findings unveils the intricate web of challenges and opportunities associated with integrating gender equality awareness into ELT materials amid the fourth industrial revolution. The evolving landscape of technology-driven education necessitates a reevaluation of traditional pedagogies to ensure they remain relevant and impactful. Key findings highlight the need for a holistic approach that addresses not only the explicit content of ELT materials but also the implicit messages they convey. Incorporating gender-sensitive language and diverse perspectives into curricular design emerges as a crucial aspect, fostering an inclusive learning environment that prepares learners for a globalized and gender-diverse workforce.

Furthermore, the discussion delves into the role of technology itself as both an enabler and a potential obstacle in promoting gender equality through ELT materials. While digital platforms offer unprecedented opportunities for disseminating inclusive content, they also pose challenges related to access, bias in algorithmic systems, and the perpetuation of gender stereotypes in online spaces. Striking a balance between harnessing technology's potential and mitigating its pitfalls becomes paramount in crafting an ELT curriculum that aligns with the principles of gender equality. The review also emphasizes the importance of teacher training programs to empower educators in integrating gender-sensitive practices into their teaching methodologies, ensuring that the transformative potential of ELT materials is fully realized.

This paper navigates the intricate terrain of promoting gender equality

awareness through ELT materials in the era of Industrial Revolution 4.0. The findings underscore the need for a holistic and technology-conscious approach, acknowledging the symbiotic relationship between language education and societal values. As we navigate the challenges and opportunities presented by the digital age, the discussion prompts a reevaluation of pedagogical practices, curriculum design, and teacher training initiatives. By critically examining methodologies and their implications, this review contributes to the ongoing discourse surrounding the integration of gender equality awareness in ELT materials, fostering a nuanced understanding of how language education can be a catalyst for positive social change in the context of the fourth industrial revolution.

There are three fundamental reasons for making language as an object of gender study. First, one of the objectives of gender research is to dismantle cultural aspects related to gender social inequality. The second reason is the wave of the study of "female image", namely representation. Language has a relationship with the study of representation because language is a medium of representation. The third reason is the influence of anthropological theory, namely the Sapir-Whorf hypothesis which states that language strongly influences and even determines one's worldview. The language we use consciously or unconsciously influences our thoughts about all things in our world; In other words, language influences the way we act as women or as men in society; language also reproduces the way we determine our cultural identity.

As the most important part of teaching, textbooks are used in almost all classes at universities (as indicated in an article from Blumberg (2015) and therefore, when they are used, teachers need to adjust the content of their textbooks to be able to meet the needs of stakeholders, one of them is the students' needs. This identification stage is in line with the Need Analysis from Richards (2007). The existence of a government program that emphasizes national character-based education has inspired several studies that focus on developing textbooks that use cultural products with local contents.

An interesting fact on the plan of implementing the 4.0 curriculum is that the teaching is attributed to the use of digital media and along with it required new literacy tailored to the development of industrial technology. Along with that, the teaching paradigm needs to be adapted to the current needs which can give insights on gender equality to the students. The perspective on women is no longer limited to the female image represented by the 'printed image' found in the teaching book but has become more complex as the use of different types of digital media. Students become agents who participate in revealing an image that has been remade in accordance with the background of the student's knowledge.

This idea is in line with the statement from Brugeilles and Cromer (2009) about gender representation in the textbooks. She mentions that the scope of studies which were previously conducted is simplistic and limited to the use of traditional methodology which implemented pre-established categories. In order to understand the idea of gender equality through textbook analysis, she offers to employ a new quantitative

approach in a thorough analysis of gender representation reflected on a number of textbooks from a variety of subjects.

Some studies focus on investigating teaching materials content relating to gender values have been conducted before. The articles from Foulds (2013) and Blumberg (2015) discuss the gendered content reflected on textbooks used in Kenya and on educational policy from worldwide views. Furthermore, a research from Warouw (2008), used the content analysis procedure proposed by Denscombe (2006) in analyzing textbooks content. The units of analysis are coded based on categories and the units of analysis in her study are in the form of written texts such as words, sentences or paragraphs, and the forms of visual images such as pictures, photographs or drawings. The categories used in this study namely gender-related job possibilities, gender-based activity types, stereotyped sex roles, stereotyped physical appearances, stereotyped characteristics, sexist language, progressiveness and neutrality, have been developed through deductive and inductive processes. The categories are divided into initial categories and new categories. The initial categories were a result of deductive processes, which means that these categories are found in previous studies in the literature such as from Ansary and Babaii (2003) and Suryadi and Idris (2004) cited in Warouw (2008).

Table 1 Categories for content analysis: deduced from the literature

Main Categories	Details	Sources
Gender-related job possibilities	Women usually have restricted choices of occupation, whereas men can enjoy varied job opportunities. This category can be analyzed by looking at the visual images and the written texts.	Ansary & Babaii, (2003).
Gender-based activity types	Indoor activities such as watching TV at home, reading a book at the library or sitting in the classroom are indicated as women's activities. However, outdoor activities such as playing football, driving a car and riding a bicycle are only for men. This category can be analyzed by looking at the visual images and the written texts.	Ansary & Babaii, (2003).
Stereotyped sex roles	Such roles as cooking, washing the dishes, or doing the laundry are indicated as traditional roles for women and not for men. In other words, women tend to have domestic roles rather than public roles, which are held by men. This category can be analyzed by looking at the visual images and the written texts.	Ansary & Babaii, (2003). Suryadi & Idris, (2004).
Stereotyped physical appearances	The portrayal of women's physical appearance is usually depicted in a traditional or stereotyped way such as having long hair, wearing skirts or traditional clothes, and being beautiful. This also portrays a sexualised role for women. In contrast, men tend to have short hair and a strong body. This category can be analyzed by looking at the visual images and the written texts.	Suryadi & Idris, (2004).
Stereotyped characteristics	Women tend to have more passive characteristics, whereas men are usually more active and brave and are depicted as leaders. This category can be analyzed by looking at the visual images and the written texts.	Suryadi & Idris, (2004).
Gender-based language	The tendency to favour the predominant sex may also appear in the language. Gender preference content in language can be seen through the persistent use of a masculine before a feminine noun in a sentence. For example: 'brother and sister', 'son and daughter'. Another example is when a masculine	Ansary & Babaii, (2003).

Table 1 delineates the comprehensive categories employed for content analysis, extrapolated from an extensive review of the literature. The first category, gender-related job possibilities, underscores the historical gender disparity in occupational choices, exemplifying how women have traditionally faced limited options compared to the diverse opportunities available to men. The visual and textual elements within educational materials are scrutinized to unveil and evaluate these ingrained biases, allowing for a nuanced exploration of societal perceptions regarding gender roles. Similarly, the category of gender-based activity types delves into the portrayal of indoor and outdoor activities, discerning a stereotypical division that relegates women to domestic and indoor pursuits while associating men with outdoor and more dynamic activities. The visual and textual components of the

materials undergo meticulous analysis to unravel the underpinnings of these gendered representations, providing critical insights into the perpetuation of societal norms within educational content.

Stereotyped sex roles, the third category, dissects the delineation of traditional roles attributed to women, focusing on activities such as cooking, dishwashing, and laundry, which are depicted as exclusive domains of women. This reinforces the notion that women are primarily associated with domestic responsibilities, relegating them to a secondary role in the public sphere. The visual and textual dimensions are again pivotal in unraveling the reinforcement of these gender norms within educational materials. Stereotyped physical appearances, the fourth category, elucidates the portrayal of women with traditional attributes like long hair, skirts, and an emphasis on physical beauty, reinforcing a sexualized role. In contrast, men are depicted with short hair and a robust physique. This analysis of visual and textual elements unveils the perpetuation of traditional gender expectations, contributing to the shaping of societal perceptions of physical appearance and beauty standards.

The fifth category, stereotyped characteristics, delves into the depiction of passive attributes assigned to women, juxtaposed with the portrayal of men as active, brave, and natural leaders. This binary representation not only reinforces traditional gender roles but also reinforces societal expectations regarding behavioral attributes associated with each gender. The visual and textual analyses critically dissect the manner in which such characteristics are portrayed

within educational materials. Finally, the sixth category, gender-based language, scrutinizes linguistic nuances that perpetuate gender bias. This includes the persistent use of masculine terms before feminine nouns and the generic use of masculine pronouns for unspecified categories. An exclusive focus on written texts allows for an in-depth exploration of the language employed, revealing subtle yet potent biases ingrained in the linguistic fabric of educational materials.

The categories outlined in Table 1 offer a systematic and comprehensive framework for content analysis, meticulously derived from an amalgamation of existing literature. The interdisciplinary examination of visual and textual elements within educational materials provides invaluable insights into the perpetuation of gender stereotypes, biases, and expectations. The findings resulting from this content analysis contribute to a broader understanding of how educational materials reflect and, in turn, shape societal attitudes toward gender roles, ultimately paving the way for informed interventions and revisions within educational curricula to foster gender inclusivity and equity. Whilst initial categories were identified through deductive processes, the new categories are a result of inductive processes. This means that the categories were derived directly from the data and developed during the data analysis. Those categories are summarized in the following table:

Table 2 Categories for content analysis: emerging from data

New categories	Details	Examples
Development/Progressiveness	New images or portrayals of gender values that are different from the traditional ones in the English coursebooks' pictures, texts and activities can be seen as a positive development or progressiveness. This category can be analysed by looking at the visual images and the written texts.	Women usually do jobs or activities that are identical to men, such as driving a car or playing football
Neutrality	The use of gender neutral representation or equal gender representation of both sexes	Men and women do a certain activity together such as washing the dishes in the kitchen.

Table 2 introduces novel categories emerging from data analysis, shedding light on evolving perspectives in educational materials. The first category, Development/Progressiveness, discerns the presence of new images and portrayals of gender values that deviate from traditional norms within English coursebooks' visual depictions, texts, and activities. This category signifies a positive trajectory, highlighting instances where women engage in jobs or activities traditionally associated with men, such as driving a car or playing football. The visual and textual analyses serve as critical tools for unearthing instances of progressiveness, offering a nuanced understanding of how contemporary educational materials challenge and redefine entrenched gender stereotypes. By embracing these new representations, coursebooks contribute to a more inclusive and progressive educational landscape that mirrors societal advancements in breaking down gender-related barriers.

Neutrality, the second category, underscores the importance of gender-neutral representation or equal gender representation in educational materials. This category emphasizes scenarios where both men and women participate in activities together, fostering a sense of equality. An example includes depicting men and women sharing responsibilities like washing dishes in the kitchen. This shift towards neutrality

signifies a departure from the perpetuation of gender biases and promotes a more balanced portrayal of genders in educational content. The visual representation and textual content undergo scrutiny to reveal instances where gender neutrality is actively embraced, providing insights into the transformation of educational materials towards fostering gender-inclusive perspectives. By incorporating neutrality into the educational discourse, coursebooks play a pivotal role in shaping attitudes and perceptions, contributing to a more egalitarian learning environment.

The emergence of these new categories in Table 2 reflects a paradigmatic shift in the evaluation of educational materials, moving beyond traditional analyses to encompass progressive and neutral representations. The juxtaposition of these categories with the previously established ones in Table 1 illustrates the evolving nature of content analysis in response to societal changes. As educational materials evolve to reflect a more nuanced understanding of gender roles and relationships, the delineation of these emerging categories offers a valuable framework for educators, curriculum designers, and policymakers to critically assess and adapt course materials. Ultimately, the integration of Development/Progressiveness and Neutrality categories into content analysis enhances the potential for transformative change in educational settings, fostering an environment where diversity is celebrated, and gender biases are actively challenged. This research contributes to the ongoing discourse on gender inclusivity in education, urging stakeholders to consider and implement progressive changes that resonate

with the dynamic and evolving nature of societal perceptions on gender.

The categories above were included in the method for analyzing the gender content in teaching materials. However, all images captured and analyzed on the studies were collected from printed visualization found on teaching materials. These images can be shifted as students' perspectives are taken into account in other research in which students may construct new ideas of gender representation which are built based on their life experience and identity as millennials (Warouw, 2019). This concept is shown through how they viewed male and female characters in local folklores and tried to reformulate their images through dynamic representation of characters using digital media. In summary, the following table represents the comparison of old and new paradigms as explained previously in this article.

Table 3 The shift of framework for gender analysis on textbook

	Old paradigm	New paradigm
Criteria	Gender-related job possibilities, Gender-based activity types, Stereotyped sex roles, Stereotyped physical appearances, Stereotyped characteristics, Sexist language	Progressiveness Neutrality
Gender representations	Printed visualisation	Digital visualization
Gender ideas	Authors/ publishers' ideas	Creators' (including teachers and/or students) ideas
Other issues	Textbook accessibility	Digital world accessibility

The transformation in the framework for gender analysis in textbooks, as delineated in Table 3, signifies a pivotal shift from the archaic paradigm to a contemporary perspective. The erstwhile criteria encompassed aspects such as gender-related job possibilities, activity types, stereotyped sex roles, physical appearances,

characteristics, and the use of sexist language. In contrast, the new paradigm introduces a more nuanced evaluation, focusing on progressiveness, neutrality, and gender representations. The transition from printed visualization to digital visualization also underscores a significant metamorphosis in the conception and portrayal of gender ideas. While the older paradigm primarily reflected the authors' and publishers' ideas, the advent of digital media broadens the spectrum to include creators' ideas, comprising teachers and/or students. This shift not only revolutionizes the conceptualization of gender but also extends the discourse to incorporate diverse perspectives, enriching the pedagogical landscape.

The dynamics of gender analysis extend beyond the content itself, encapsulating broader issues of accessibility. In the traditional paradigm, concerns centered around textbook accessibility, predominantly referring to the physical availability and distribution of printed materials. However, the contemporary shift to digital visualization precipitates a paradigmatic change, redirecting attention towards digital world accessibility. The latter involves considerations beyond mere physical availability, encompassing factors such as technological infrastructure, internet accessibility, and digital literacy. This expansion of the discourse acknowledges the evolving nature of education, wherein the mode of content delivery plays a pivotal role in shaping not only the representation of gender but also the inclusivity and reach of educational resources. The transition to digital platforms, therefore, not only redefines the evaluative criteria for gender

analysis but also prompts a broader conversation about the accessibility and inclusivity of educational materials in the digital age.

Furthermore, the dichotomy between the old and new paradigms in Table 3 illuminates a profound reconceptualization of gender-related considerations in educational materials. The previous emphasis on stereotyped sex roles, physical appearances, and characteristics is supplanted by a more progressive outlook that scrutinizes content for its adherence to neutrality and the quality of gender representations. Progressiveness in the new paradigm signifies a departure from entrenched stereotypes, fostering an environment that encourages diversity and challenges preconceived notions. Neutrality, on the other hand, underscores the importance of unbiased and impartial representations, eschewing any form of gender bias in educational content. This paradigm shift, from rigid stereotypes to a more fluid and inclusive approach, not only reflects societal advancements in understanding gender but also aligns with contemporary educational goals of fostering critical thinking and inclusivity. As educational materials evolve in response to societal changes, the shift in gender analysis frameworks becomes emblematic of a broader transformation within educational paradigms, echoing the imperative to adapt and respond to the evolving needs of a diverse and dynamic learner population.

Conclusion

In the evaluation of gender portrayal within English language teaching materials, it can be deduced that the criteria extend beyond conventional parameters, embracing novel benchmarks such as progressiveness

and neutrality. The erstwhile perspective, confined to the portrayal of women within the confines of 'printed image' in teaching books, has evolved into a multifaceted comprehension, intricately woven with diverse forms of digital media. The visualization of gender representation is intricately entwined with the underlying gender ideologies held by the creators of educational materials. Concurrently, the implementation of a new curriculum introduces emergent challenges, notably concerning gender distinctions in the accessibility of digital learning resources. A discernible trend pertains to the contemporary discourse on the equitable accessibility of digital learning materials, particularly within the recent context of Indonesia. Anticipating future research endeavors, emphasis on the pursuit of egalitarian accessibility to digital learning resources in the Indonesian educational landscape is paramount, encapsulating the evolving complexities of gender representation and accessibility in the realm of English language education.

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