

# Management Model of Character Education Based Whole School Development Approach: A Research and Development

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## ABSTRACT

One aspect that has yet to receive much attention in the era of Education 4.0 is character education for students. For this reason, innovation is needed in developing a character education management model based on the whole school development approach. This study aims to develop a model of character education management for vocational school students. Using an R&D design, this study involved teachers at vocational schools and validators in Palopo City, South Sulawesi, Indonesia. Data were collected using questionnaires, interviews, validation sheets, and observation sheets and were analyzed qualitatively and quantitatively. The study results show that the whole school development approach-based character education management model is valid, practical, and effective in developing student character. With these findings, it is hoped that vocational school teachers can develop a character education management model according to the needs of their respective schools so as to develop into better individuals in all aspects of life.

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## 1. INTRODUCTION

Education 4.0 is a vague term, and no standard definition has yet emerged and agreed upon. This term is more of a general approach or trend to prepare the future workforce for Industry 4.0 rather than a single or specific intervention. According to Hussin (2018), education 4.0 is defined as using technology in the context of teaching and learning. This is due to technology enabling human-machine interface interactions that look universal, contributing to a revolution in innovation. This is done to prepare graduates for future life and work. Implementing Education 4.0 is needed because it is a more practical approach in teaching and learning. In addition, education 4.0 also offers views on teaching and learning innovation and using information and technology in the process.

Under these conditions, current education must ensure learning that can help students face the future (Schwab, 2016). The Fourth Industrial Revolution will accelerate the disruption in work we are already experiencing, and it is necessary to empower individuals to take responsibility for their

education and career strategies (Reaves, 2019). The World Economic Forum reports that IR 4.0 requires reshaping the future of education and employment to diversify talent. Janíková & Kowalíková (2017) considers that the role of centers in the future needs to be summarized by ensuring lifelong learning. In addition, an outstanding education should provide individuals with experience about socio-economic changes, including changes in information technology. Meanwhile, Sharma (2019) emphasizes that when we teach our students according to IR 4.0, we must maintain core attributes, ethical standards, and ways of life.

Changes in the era and technology impact various deviant behaviour of students. Nasti et al. (2023) stated that various disgraceful behaviours that are rife today are not only seen as purely aggressive actions but are also severe problems related to dynamically changing social relations. In the context of the school environment, student morale has declined since the 1950s (Samson & Allida, 2018) caused mainly by various factors, such as the progress of the times, technological developments, and others.

With these various problems, education should have been designed to improve student character. In line with this statement, Mohzana et al. (2020) emphasized that all aspects of education must be directed at the character development process. In other words, education in schools must form strong student character and not only focus on cognitive aspects. A teacher must be able to translate the curriculum into the learning process to shape student character (Aini & Fitria, 2021; Sutarman et al., 2020). By having a solid character, the potential for bullying in schools can be significantly reduced, and it is a form of investment for the nation's future.

One strategy that teachers can use is to develop their character education management model. By developing their educational model, the teacher can investigate the various needs of students at school. One approach that can be integrated into the management model is the whole-school approach. This approach can promote a sense of belonging and encourage meaningful relationships among staff, teachers and students (Glazzard, 2019; Mogren et al., 2019). Such an approach can also promote a positive school culture and provide opportunities for staff involvement to address and enhance respectful behaviour (Lester et al., 2020).

Several previous studies have reviewed the theme of character education management. In Indonesia, most previous studies have used a qualitative design for the kindergarten, elementary and high school levels (Herlina et al., 2022; Lestari et al., 2022; Muthohar, 2021). In addition, Irfan and Usman (2023) found a form of character education activity with a whole school approach, consisting of (a) providing examples and habituation, (b) compiling a character syllabus, (c) developing character lesson plans, (d) class development conducive environment, and (e) holding parent meetings. Another qualitative study at the tertiary level was conducted by Mohzana et al., (2020). The study found evidence that a character education management model had been implemented at the tertiary level, namely the micro-education and macro-education models. Nurhayati et al. (2018) devised a model for managing character education at the high school level through a research and development design approach. Their findings indicated the model's validity in practical application. However, existing research has yet to fully explore character education models employing a whole-school development approach, particularly within the vocational high school sector. This observation underscores the imperative for conducting development research aimed at generating effective character education learning products for schools. The necessity for such research is premised on the critical role of character education in shaping students' moral and ethical values, which are fundamental for their personal development and societal contribution.

## 2. METHODS

### 2.1 *Research Design, Site, and Participants*

This study aims to develop a character education management model based on the whole school development approach. To achieve this goal, the researchers used the Research and Development (R & D) design from Thiagarajan et al. (1974), commonly known as 4D, which stands for the four main stages: Define, Design, Develop, and Disseminate. The location of this research is State Vocational High School

3 Palopo, South Sulawesi, Indonesia. In addition, this study involved three groups of participants: the teacher, validator and student groups. The number of research participants this time was ten high school teachers, five validators, and 32 students. The teacher and student groups responded to the practicality and effectiveness tests, while the validator group responded to the validity test. In the define phase (needs analysis), the teachers also participated in the interview session.

## 2.2 Data Collections

### 2.2.1 Semi-structured Interview

The first instrument used in this study was a semi-structured interview. This interview was designed with a more relaxed situation so that participants could participate more actively. This type of interview can explore participants' perspectives and arguments more in-depth than structured interviews (Guthrie, 2019; Helaluddin et al., 2023). Interviews were conducted in a particular room, and conversations were recorded using a voice tape recorder for approximately 15-20 minutes for each participant. Before being recorded, the researcher asked the participants to sign a letter of agreement in the interview. This interview was conducted in the definition or needs analysis phase to obtain information about the concept and application of the character education management model in schools.

### 2.2.2 Validation Sheet

In determining product development quality, the researcher conducted a validation test involving five validators. The validation test aims to determine the level of product validity and whether it is feasible to apply (Hasmawaty et al., 2020; Helaluddin et al., 2021). The researcher developed the validation sheet containing several aspects, such as content, language, graphics, and presentation. The validators provide assessments and suggestions for the character education management model book. The validation sheet consists of four assessment options, starting from a score of 1 (lowest) and a score of 4 (highest).

**Table 1.** Criteria in Determining the Level of Validity and Practicality

No.	Score Range	Category
1.	$3.6 \leq M \leq 4.0$	Very Valid/Very Practical
2.	$2.6 \leq M \leq 3.5$	Valid/Practical
3.	$1.6 \leq M \leq 2.5$	Less Valid / Less Practical
4.	$< 1.5$	Invalid/Not Practical

### 2.2.3 Teacher Response Questionnaire

To measure the model's practicality, the researcher used an instrument in the form of a questionnaire addressed to the teacher. In other words, the questionnaire collects their responses as users of these learning products. The researcher designed this questionnaire with a rating range from 1 to 4. There are several components in the practicality questionnaire, namely: (a) easy to apply, (b) use of language, (c) time efficiency, and (d) the attractiveness of model books. A score of 4 is given if the research participant states that the learning product is efficient. Furthermore, a score of 3 is given if the respondent says it is practical, a score of 2 is given if it is not valuable enough, and a score of 1 if the respondent considers the learning product impractical.

### 2.2.4 Observation Sheet

The following instrument in this study is the observation sheet. This instrument collects data about participant behaviour changes (students). Researchers made observations to find out whether students had implemented character values at school. There are several aspects contained in the observation sheet, namely: (a) religious aspects, (b) discipline, (c) honesty, (d) national spirit, and (e) care for the environment.

### 2.3 Procedure

As previously discussed, this study applies an R&D design with four main stages (Thiagarajan et al., 1974). Thus, the research procedure this time also refers to the four stages, namely:

#### 1) Define Stage

At this early stage, the researcher interviewed teachers regarding the problems of character education in schools. The interview was conducted to obtain an initial description and the needs of teachers regarding the character education management model. The interview data were then analyzed and used as a reference in developing learning products.

#### 2) Design Stage

The second stage in this study is the design stage. This phase is usually known as the research product design phase. Researchers developed a model book of character education management that fits the results of the needs analysis. At the end of this stage, the draft model book developed by the researcher is ready to be validated.

#### 3) Develop Stage

After the initial draft of the model book was developed, the researcher proceeded to the third stage, namely the development stage. At this stage, the research product is tested with a series of tests to determine its quality. Three tests are conducted in this phase: validity, practicality, and effectiveness. The validity test involved five experts in assessing various aspects of the model book. In addition, the practicality and effectiveness test is a test that involves teachers as users of the product to find out how easy it is and the potential effect of the product.

#### 4) Disseminate Stage

The final stage in this study is the dissemination phase, which is disseminating research results. Researchers carried out Focus Group Discussion (FGD) sessions by inviting teachers. In this session, the researcher explained various findings and novelties.

### 2.4 Data Analysis

#### 2.4.1 Qualitative Analysis

First, the data obtained through interviews in the define phase were analyzed qualitatively using thematic analysis techniques. The analysis technique analyses the classification and presents the themes (patterns) related to the data. The technique can illustrate data in great detail and deal with diverse subjects through interpretation (Kiger & Varpio, 2020). In addition, thematic analysis is considered most appropriate for research that seeks to use interpretation (Boyatzis, 1998; Castleberry & Nolen, 2018). In this study, data analysis uses several stages, namely: (a) understanding the data, (b) providing initial code, (c) searching for themes, (d) reviewing themes, (e) defining themes and theme names, and (f) report (Braun & Clarke, 2020).

#### 2.4.2 Quantitative Analysis

In addition to using qualitative data analysis, this study applies quantitative data analysis. Data from questionnaires and validation sheets were analyzed to determine the average score. The results of this analysis are used to determine whether the research product in the form of a model book of character education management is categorized as valid, practical, and effective.

## 3. FINDINGS

### 3.1 Results of Needs Analysis

Based on the research stages, the initial stage in this study is the definition phase or needs analysis. The data collected through interviews with high school teachers were analyzed qualitatively using the thematic analysis technique. The data processing results converge on several themes, as presented in Table 2.

**Table 2.** Findings of the Theme of the Interview Results

No	Theme
1.	There is no final model that has been implemented in schools yet
2.	The importance of a character education management model
3.	Teachers really need a character education model
4.	The whole school approach is considered appropriate to apply

In general, there is no final model or model agreed upon by teachers that is implemented in schools. That is, teachers still apply their respective models in developing student character. This condition, of course, makes the process of character education in schools challenging to control. In addition, teachers also realize that a character education management model needs to be developed. They consider that student character education requires much time and needs planning and model development. Teachers need a character education management model to be applied in schools. Finally, teachers also agree that the whole school approach is the best to integrate into the character development process. Teachers consider this approach very appropriate in character education because it is a comprehensive approach that aims to develop students' skills through daily interactions between students, teachers, parents, and school staff.

### 3.2 Product Design

After obtaining an overview of the needs of teachers and students in schools, the researchers developed a character education management model. In this phase, several things must be considered in developing a model, such as model components, learning/education stages, time allocation, supporting tools. This model book was developed with four main sections, namely: (a) rationale, (b) introduction to the model, (c) description of the model, and (d) instructions for using the model. In addition, the character education management model also has four syntax or learning stages which include: (a) socialization, (b) planning, (c) implementation, and (e) evaluation.



**Figure 1.** Cover of Book Model

### 3.3 Product Validity, Practicality, and Effectiveness

After the product has been developed, testing must be carried out. Three tests are applied to determine the product's quality: validity, practicality, and effectiveness. In the validity test, five validators/experts were involved in providing their assessments and suggestions. The results of the validity test are presented in Table 3.

**Table 3.** Product Validity Test Results

Assessment aspect	Validator Average Score					Total	Category
	1	2	3	4	5		
Model book content	4	3.8	3.7	4	4	3.9	Very valid
language	3.5	3.7	3.6	3.6	4	3.68	Very valid
Presentation	4	4	3.7	3.7	3.8	3.84	Very valid
Layouts	3.6	3.8	4	4	3.7	3.82	Very valid

In general, the model book of character education management that has been developed is very valid. This can be seen from the average score of the four assessment aspects: content, language, presentation, and layout. The average score for the content aspect is 3.9, language is 3.68, presentation is 3.84, and layout is 3.82. Thus, all aspects in the model book are categorized as very valid because they obtain an average score of  $3.6 \leq M \leq 4.0$ .

**Table 4.** Results Analysis Response of Teachers

Aspect	Average Score (10 Teachers)	Category
Easy to apply	4.0	Very practical
Easy to understand language	3.8	Very practical
Time efficiency	3.8	Very Practical
Book fascination	3.7	Very practical

After implementing the character education management model with the whole school approach, the researcher observed the attitudes and behaviour of the students (in 1 study group). Observations were made using an observation sheet covering five aspects of student character: religious, disciplined, honest, national spirit, and caring for the environment. Table 5 presents the results of observations on these five aspects.

**Table 5.** Achievement of Student Attitudes/Characters

No	Indikator	Religious		Discipline		Honest		National Spirit		Caring for the Environment	
		F	%	F	%	F	%	F	%	F	%
1.	Very well developed	30	93.7	28	87.5	23	71.9	29	90.6	28	87.5
2.	Growing as expected	-	-	3	9.4	6	18.8	2	6.3	1	3.1
3.	Start growing	2	6.3	1	3.1	3	9.4	1	3.1	3	9.4
4.	Undeveloped	-	-	-	-	-	-	-	-	-	-

Table 5 shows that the five aspects observed have experienced significant developments. In the religious aspect, student activity showed that 30 students had done it with a total of 93.7%, while in the discipline aspect, there were 28 students or 87.5%. Regarding honesty, the number of students have shown this behaviour is 23 students or 71.9%, and the aspect of national spirit is 90.6%. Finally, regarding caring for the environment, the number of students who have shown this behaviour is 28, or 87.5%. The level of effectiveness and the findings are matched with Table 6.

**Table 6.** Effectiveness Test Results

No	Score Range	Category
1.	85.01 – 100%	Very high
2.	70.01 – 85%	High
3.	50.01 – 70%	low
4.	1.0 – 50%	Very low

From the matching results, it can be concluded that Vocational School students have demonstrated character behaviour in the "high" and "very high" categories. For the "very high" category, students have demonstrated behaviour or character in religion, discipline, national spirit, and environmental care. This means that the percentage scores of the four aspects are 85.01 – 100%. Furthermore, the only aspect that reached the "high" category was the honesty aspect of 71.9%. In general, the character education management model with the whole school approach has proven effective in developing the character of Vocational School students.

### *Discussion*

The ideal education is no longer focused on the cognitive aspect but also covered the affective domain. The affective domain can be taught by implementing a character education management model. This study aims to develop a model book for managing character education based on a whole school approach that is valid, practical, and effective. In general, the character education management model that was developed proved to be valid, practical and effective. Thus, this research product is feasible to be used and applied at the senior high school level.

The needs analysis study found that many schools (especially at the high school level) still need to have and implement a character education management model. So far, they have yet to have a character education management model based on the whole school approach. This model is urgent to develop to promote a sense of belonging and encourage meaningful relationships among students, teachers, and staff (Meroni & Velasco, 2023; Nolan et al., 2022; Pearce et al., 2022). In addition, a character education management model with a whole-school approach can promote a positive school culture and provide opportunities for staff involvement to improve their welfare (Glazzard, 2019).

Teachers have realized that the character education model is essential in forming a conducive school environment. Positive feedback and supportive relationships between teachers and administrators are critical to staff well-being and job satisfaction during periods of change, including providing opportunities for professional development (Poultney & Forbes, 2012). Lester et al. (2020) stated that this management model has the potential to improve the quality of implementation: (a) leadership commitment, (b) organizational structure and resources, (c) staff competence and commitment, and (d) translating evidence into local school policies and practices .

Several previous studies have claimed that school climate is closely related to the character and quality of life in schools. A positive school climate has great potential to reduce school staff burnout and increasing retention and stress levels as assessed by their perceptions of school climate and students' social and emotional learning (Goldberg et al., 2018; Mogren et al., 2019; Tnay et al., 2022). The school climate indicators cover several aspects, including a friendly, safe, supportive and well-maintained environment. In addition, another important indicator relates to precise and clear policies and procedures regarding the relationships, behaviour and practices of all elements of the school.

Other findings in this study stated that the research product in a model book of character education management proved valid, practical, and effective. After going through three tests to determine product quality, the model book is of good quality and can be widely used. The validity test was carried out by involving 5 experts to provide an assessment of the model book. In general, the validity of research products is seen from suitability, meaningfulness, and usefulness (Fanani et al., 2018). The higher the validity of a product, the better the conclusions generated. Valid validation results are always related to revision results that originate from input from validators/experts. Suggestions and recommendations from validators can help prepare research products to meet predetermined criteria (Husna et al., 2021; Plomp & Nieveen, 2007). Ministry of Education and Culture (2013) states that product validation aims to obtain recognition or validation of product suitability with needs so that it is feasible to implement in schools.

In addition to the validity aspect, this model book of character education management is also stated to be practical based on the assessment and responses from the teachers. A research product can be practical if teachers or students have no difficulty applying it. A product is practical if it can logically

execute instructions without significant problems (Suryani & Apriani, 2021). In other words, the product can be used easily and is as expected (Plomp, 2013). The thing that needs to be underlined is that practicality is a level of product quality that shows the ease of use and implementation of learning in the field.

Research products are considered practical if they can be used to learn logically and continuously without encountering many obstacles. Practical considerations can be seen from ease of use, efficiency of learning time, and the attractiveness of teaching materials to students' interests (Refnywidialistuti, 2021). In addition, the product's practicality level can be seen from whether the resulting product is easy to understand and can be used by teachers and students under normal conditions (Akker, 1994). Criteria for the practicality of the product, according to Nieveen (1999), include: (a) experts give consideration that the product can be applied in class, (b) the teacher states that applying the product in class, and (c) the level of adherence to learning syntax is included in the high category. In short, practicality is assessed from three aspects: ease of use, time efficiency, and module benefits.

Finally, the character education management model book that has been developed is declared effective. This is acted upon by the tendency to develop or improve the character of students in the school environment. According to Nieveen (1999), effectiveness criteria refer to the tendency to increase test scores, average student activity, and positive responses from students and teachers explained that product effectiveness is determined by learning outcomes or student behaviour after being given an intervention. Furthermore, Hasmawaty et al. (2020) claim that the effectiveness of research products for education can be measured by students' ability to master learning material and the existence of a positive attitude towards learning.

#### 4. CONCLUSION

Technological advancements and evolving societal norms necessitate an educational focus that transcends mere cognitive development to include character enhancement within the affective domain. This study has pioneered the creation of a character education management model book, advocating for a holistic school-wide approach. The findings affirm the model's validity, practicality, and efficacy, endorsing its broader application within the educational landscape. It is envisioned that this research will empower educators to tailor character education management models to their respective institutional contexts, acknowledging the diversity in student populations, learning environments, and available resources. Notwithstanding its contributions, this study's scope was limited to a singular study group, suggesting a cautious interpretation of its effectiveness. Future research directions should encompass more extensive practicality and effectiveness evaluations, incorporating a diverse array of educational settings and demographic variables. Additionally, it is recommended that subsequent studies in this domain focus on refining character education aspects through rigorous research and development informed by theoretical frameworks and educational best practices. This approach will ensure a comprehensive understanding and implementation of character education, catering to the evolving needs of students in a dynamic educational landscape.

#### REFERENCES

- Aini, M., & Fitria, R. (2021). Character education management in improving education quality in state senior high school. *Journal of Islamic Education Students (JIES)*, 1(2), 66–74. <https://doi.org/10.31958/jies.v1i2.2972>
- Akker, J. Van Den. (1994). Principles and methods of development research. In T. Plomp, N. Nieveen, K. Gustafson, R. M. Branch, & J. Van Den Akker (Eds.), *Design approaches and tool in education and training*. KluwerAcademic Publisher.
- Boyatzis, R. (1998). *Transforming qualitative information: Thematic analysis and code development*. Sage.
- Braun, V., & Clarke, V. (2020). One size fits all? What counts as quality practice in (reflexive) thematic analysis. *Qualitative Research in Psychology*, 18(3). <https://doi.org/10.1080/14780887.2020.1769238>
- Castleberry, A., & Nolen, A. (2018). Thematic analysis of qualitative research data: Is it as easy as it

- sounds? *Currents in Pharmacy Teaching and Learning*, 10(6), 807–815. <https://doi.org/10.1016/j.cptl.2018.03.019>
- Fanani, F., Fikry, I., Irawati, I., Henie, M., & Susilowati, S. (2018). The development of biology learning tools with project based learning (PjBL) model to improve the sustainable reserve food garden (SRFG) program of grade X students in SMAN 1 Singosari. *Indonesian Journal of Biology Education*, 1(1), 17–30. <https://doi.org/10.31002/ijobe.v1i1.1020>
- Glazzard, J. (2019). A whole school approach to supporting children and young people's mental health. *Journal of Public Mental Health*, 18(4), 256–265. <https://doi.org/10.1108/JPMH-10-2018-0074>  
Link
- Goldberg, J. M., Sklad, M., Elfrink, T. R., Schreurs, K. M. G., Bohlmeijer, E. T., & Clarke, A. M. (2018). Effectiveness of interventions adopting a whole school approach to enhancing social and emotional development: A meta-analysis. *European Journal of Psychology of Education*, 192–203. <https://doi.org/10.1007/s10212-018-0406-9>
- Guthrie, K. H. (2019). "Nothing is ever easy": Parent perceptions of intensity in their gifted adolescent children. *Qualitative Report*, 24(8), 2080–2101. <https://doi.org/10.46743/2160-3715/2019.3598>
- Hasmawaty, H., Syam, H., & Saman, A. (2020). Validity, practicality, and effectiveness: The last step in development of entrepreneurship education based role-playing for kindergarten. *Universal Journal of Educational Research*, 8(12), 8092–8101. <https://doi.org/10.13189/ujer.2020.082611>
- Helaluddin, H., Al Aqad, M. H., Wijaya, H., Anwar, J., Nadya, N. L., & Syafryadin, S. (2021). Development and validation of academic writing textbook based on process genre approach for university students. *Al-Ishlah: Jurnal Pendidikan*, 13(2), 1068–1079. <https://doi.org/10.35445/alishlah.v13i2.766>
- Helaluddin, H., Fitriyyah, D., Rante, S. V. N., Tulak, H., Ulfah, S. M., & Wijaya, H. (2023). Gen Z students perception of ideal learning in post-pandemic: A phenomenological study from Indonesia. *International Journal of Educational Methodology*, 9(2), 423–434. <https://doi.org/10.12973/ijem.9.2.423>
- Herlina, L., Sumarto, S., Suryana, A., Triatna, C., Nurdin, D., & Nurlaely, N. (2022). Character-based leadership model in the implementation of character education as an effort to overcome Radicalism. *Al-Ishlah: Jurnal Pendidikan*, 14(1), 897–908. <https://doi.org/10.35445/alishlah.v14i1.1719>
- Husna, N. A., Zaini, M., & Winarti, A. (2021). The validity of biology module for senior high school on grade X in even semester based on critical thinking skills. *BIO-INOVED: Jurnal Biologi-Inovasi Pendidikan*, 3(1), 28–38. <https://doi.org/10.20527/bino.v3i1.9918>
- Hussin, A. A. (2018). Education 4.0 made simple: Ideas for teaching. *International Journal of Education & Literacy Studies*, 6(3), 92–98.
- Irfan, M. A., & Usman, F. (2023). Character education management with whole school development approach. *JOSSE: Journal of Social Science and Economics*, 2(1), 18–28. <https://jurnal.stai-alazharmenganti.ac.id/index.php/josse/index>
- Janíková, M., & Kowaliková, P. (2017). Technical education in the context of the fourth industrial revolution. *Journal for Research and Education, Special Issue (December)*, 65–73.
- Kiger, M. E., & Varpio, L. (2020). Thematic analysis of qualitative data: AMEE guide No. 131. *Medical Teacher*, 42(8), 846–854. <https://doi.org/10.1080/0142159X.2020.1755030>
- Lestari, N., Cahyati, D., & Umayah, S. (2022). Manajemen pendidikan karakter di taman kanak-kanak. *Jurnal Ilmiah PTK PNF*, 17(2), 77–88. <http://doi.org/10.21009/JIV.1702.9>
- Lester, L., Cefai, C., Cavioni, V., Barnes, A., & Cross, D. (2020). A whole-school approach to promoting staff wellbeing. *Australian Journal of Teacher Education*, 45(2), 1–23. <https://doi.org/10.14221/ajte.2020v45n2.1>
- Meroni, C., & Velasco, V. (2023). School-based interventions for migrant students in the framework of the health promoting whole-school approach: An umbrella review. *Sustainability (Switzerland)*, 15(3), 1894. <https://doi.org/10.3390/su15031894>

- Mogren, A., Gericke, N., & Scherp, H. Å. (2019). Whole school approaches to education for sustainable development: A model that links to school improvement. *Environmental Education Research*, 25(4), 508–531. <https://doi.org/10.1080/13504622.2018.1455074>
- Mohzana, M., Fahrurrozi, M., Haritani, H., Majdi, M., & Murcahyanto, H. (2020). A management model for character education in higher education. *Talent Development & Excellence*, 12(3s), 1596–1601. <http://www.iratde.com>
- Muthohar, A. (2021). Implementation and development models of character education in school. *Jurnal Penelitian Pendidikan dan Pembelajaran*, 8(2), 69–82. <https://doi.org/10.21093/twt.v8i2.3236>
- Nasti, C., Sangiuliano Intra, F., Palmiero, M., & Brighi, A. (2023). The relationship between personality and bullying among primary school children: the mediation role of trait emotion intelligence and empathy. *International Journal of Clinical and Health Psychology*, 23(2), 100359. <https://doi.org/10.1016/j.ijchp.2022.100359>
- Nieveen, N. (1999). Prototyping to reach product quality. In T. Plomp, N. Nieveen, K. Gustafson, R. M. Branch, & V. Den Akker (Eds.), *Design approach and tools in education & training*. Kluwer Academic Publisher.
- Nolan, A. D., Hannah, E. F. S., Lakin, E., & Topping, K. J. (2022). The impact of an elementary whole-school nurturing approach: A controlled multiple-perspective follow-up study. *Electronic Journal of Research in Education Psychology*, 21(1), 5–28.
- Nurhayati, N., Sulasminten, S., & Roesminingsih, E. (2018). The development of character education management model in secondary school. *Advances in Social Science, Education and Humanities Research*, 212, 469–474. <https://doi.org/10.2991/icei-18.2018.101>
- Pearce, N., Monks, H., Alderman, N., Hearn, L., Burns, S., Runions, K., Francis, J., & Cross, D. (2022). 'It's all about context': Building school capacity to implement a whole-school approach to bullying. *International Journal of Bullying Prevention*, 0123456789. <https://doi.org/10.1007/s42380-022-00138-6>
- Plomp, E., & Nieveen, N. (2007). *An introduction to educational design research*. Enschede.
- Plomp, T. (2013). *Educational design Research: An Introduction*. The Netherlands Institute for Curriculum Development.
- Poultney, R., & Forbes, D. (2012). A whole-school approach to developing resilience: Resources and suggestions for New Zealand schools. *Teachers and Curriculum*, 20(1), 43–50. <https://doi.org/10.4324/9780203816165-16>
- Putri, S. K., Hasrafuddin, H., & Syahputra, E. (2019). Development of learning devices based on realistic mathematics education to improve students' spatial ability and motivation. *International Electronic Journal of Mathematics Education*, 14(2), 243–252. <https://doi.org/10.29333/iejme/5729>
- R. Refnywidualistuti. (2021). Practicality of teaching materials developed by using problem based learning based on PAKEM model on fraction material in elementary school. *Proceedings of the First International Conference on Science, Technology, Engineering and Industrial Revolution (ICSTEIR 2020)*, 536, 361–365. <https://doi.org/10.2991/assehr.k.210312.060>
- Reaves, J. (2019). 21st century skills and the fourth industrial revolution: A critical future role for online education. *International Journal on Innovation in Online Education*, 3(1), 1–21.
- Samson, B., & Allida, V. (2018). Moral decline in schools: Reflections on public secondary schools in Iganga District, Uganda. *Baraton Interdisciplinary Research Journal*, 8(Special Issue), 1–9.
- Schwab, K. (2016). *The fourth industrial revolution*. World Economic Forum.
- Sharma, P. (2019). Digital revolution of education 4.0. *International Journal of Engineering and Advanced Technology*, 9(2), 3558–3564. <https://doi.org/10.35940/ijeat.a1293.129219>
- Suryani, H., & Apriani, E. (2021). Developing academic writing module to reduce plagiarism. *Al-Ishlah: Jurnal Pendidikan*, 13(3), 2767–2775. <https://doi.org/10.35445/alishlah.v13i3.791>
- Sutarman, Widiastuti, I., Badriatin, T., Arofah, I., & Syahriani. (2020). Management of character education strengthening strategies in students. *International Journal of Psychosocial Rehabilitation*, 24(8), 1790–1801. <https://doi.org/10.37200/IJPR/V24I8/PR280199>

- Thiagarajan, S., Semmel, D. S., & Semmel, M. I. (1974). *Instructional development for training teachers of exceptional children*. Indiana University.
- Tnay, J. K. S., Adruce, S. A. Z., Nordin, Z. S., Mahli, O. H., & Ting, C. Y. (2022). Whole school approach on social and emotional guidance among rural elementary schools: Regular teachers' involvement. *International Journal of Instruction*, 15(3), 307–328. <https://doi.org/10.29333/iji.2022.15317a>