

Development Modules Based of Character Education on Theory Pollution Environment of Class VII Junior High School

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Abstract : Module is tool study independent who can used alone for get desired skills and knowledge. They usually take form ingredient written or print and include teaching materials, description activity learning, and interesting exercises. Destination from study this is for provide hard copy or product print in the form of module based education character element pollution environment . This module built with follow 4D research and development (R&D) paradigm which includes stages definition, design, development, and implementation . Lecturer media and materials expert validate module with use form bait come back students. Junior High School mother district. Class VII Deli Serdang consisting of of 28 students follow exam that. Validation media and materials expert produce an average of 79%, while questionnaire answer students an average of 81 %. Validation results by media and materials experts and survey responses student show that module based education generated character including in category worthy for used. For reason this, the module created could direct used in Settings education.

Keywords : Pollution environment, Character education, Development module

mostly problem emerging environment moment this is fine globally and national, sourced from behavior man (Simarmata et al., 2018). Happening problem environment is part from activity human. As example, still many students who don't on purpose throw away rubbish random, like ditch, though they aware will deed them. Lack of education character instilled in students becomes reason thing this occur (Hidayati et al., 2020). Needs man moment this has bring impact negative to environment nature. Pollution environment like waste domestic and polluting waste river and less clean water supply just a number of from so much many problem must have environment handled. For deal with it need implanted morals and values sublime and sublime since small, especially concern to environment (Sya`ban & Wilujeng, 2016). bahwa SSP yang telah dikembangkan layak dipergunakan, berdasarkan hasil penilaian validator "sangat baik" dan berdasarkan hasil uji beda antara kelas kontrol dan eksperimen yang menunjukkan adanya perbedaan rata-rata nilai literasi sains antara dua kelas tersebut yaitu terdapat peningkatan literasi sains siswa menggunakan SSP berbasis kearifan lokal yang dikembangkan. Kata kunci: SSP, keunggulan lokal, literasi sains, dan kepedulian lingkungan Developing of Essence and Energy SSP Based on Local Wisdom to Improve Literacy Science and Environmental Care Of Students of MTs Abstract This research aims to develop appropriate subject specific pedagogy based on local wisdom to improve literacy science and environmental care of students of madrasah Tsanawiyah. This research is used the research and development (R&D

Increase degradation environment as consequence from increase exploitation man to natural has increase possibility happening disaster. The size damage environment is component important influencing level risk disaster in an area, especially in Indonesia which is an archipelagic country . (Pramono, 2016) .

Management challenges as well as Garbage disposal is one of the environmental problems. Garbage is a waste material or waste produced by humans that is not used. Currently, humans pay less attention to the surrounding environment. Many do not understand the cleanliness of the environment, so they easily produce waste that is quite harmful to the environment. Like the daily activities that we do such as bathing, washing, and other activities that seem trivial, it turns out to leave residual waste that can damage ourselves and the environment (Hasibuan, 2016) .

Humans as rational beings have an impact on the environment. To improve their standard of living, humans will master and take advantage of everything around them. However, human tendencies are never fulfilled, and they adopt activities that endanger the sustainability of natural resources. Human behavior that abuses the environment will reduce the quality of the environment. Disposing of garbage indiscriminately, for example, can pollute the environment and cause various difficulties (Dwi, 2017).

Character education aim for embed values in participants educate, renew arrangement life with those who appreciate freedom individual, and improve quality maintenance school and results appropriate education with standard competence To use reach formation character and formation character or morals noble. student by whole. Build morals noble and commendable must conducted by period long and sustainable, because behavior develop when conducted over and over again and become habit in self someone. If the teacher no set the planting process good behavior in activity learning with caution, desirable behavior, such as concern to environment, no will imprinted on the children. Student will notice cleanliness, avoid throw away rubbish carelessly at school, and not consume foods that contain ingredient additional (Elsa et al., 2014) .

Character education is something type the activities in it conducted something action education for next generation come. Destination education character is for Keep going continuously shape enhancement self individual and develop ability self for leads to more behavior good. (Efriani et al., 2016) . Character education needed so that children could life with correct values. Learning based character more from just learning with give Theory education; participant educate could create excellent character based on values culture Indonesian nation (Dance, 2012) .

Character education at level unit school could grow values with instilling strong morals and character in all topics taught in class, through habituation learn, adopt activity extracurricular, counseling, and approach integrated (Mulyasa, 2018) . Educator no use his creativity for planning, preparing and producing Innovative and mature teaching materials to be interesting for students. This thing of course just Becomes problem that doesn't only must solved, but must there is action real for overcome it. One of them, educator need build his creativity for produce teaching materials. This can Becomes step important in increase quality education (Kibtiah et al., 2020) .

Module is a unit of instruction prefabricated used for guide student through series arranged lessons and activities for help they reach series destination same learning. With use module this, student will have more potential big for find solution problem obtained from experience daily related Theory diversity biological (Herayana et al., 2020) . This module will working as teaching materials for used student by independent, purposeful for resolve the problem of teachers who don't could participate or meet directly in class during the learning process teach. Besides used during school hours regular, students can also use module next for homeschooling goals, but also when they want to study by independent or outside of class hours or during class hours use it by private.

With use module this, student could acquire and complete Theory studies they through studies individual. Book for student is component key in carry out educational programs character, and module could used in accordance with teacher demands for source power instructional (Riwanti & Hidayati, 2019) . Superiority module learning biology based education character where is the curriculum program education character must focus on inner processes empathy and judgment in expression knowledge, thoughts and values; planning and shaping method decision ethical or morally evaluated; and by explicit integrate knowledge, values, and commitments applied.

Based on conditions at SMP Karya Mother, Kab. Deli Serdang. The results of interviews with teachers regarding the teaching materials used in the learning process, look that book text published by publisher education is source instructional main used in class science. There are two type provided book designed special for teachers, and designed special for students. During the learning process, the teacher uses book IPA text which includes all IPA class that is chemistry and physics. Use module based education character still very little in the field because lack of sustainable development. Module is developed teaching materials by unique, and with Thus, its use just show that he have potency for increase standard superiority education, for problems that arise in the learning process in the field (Riwanti & Hidayati, 2019).

To overcome problem it's the author create units of teaching materials that integrate character education. Riwanti 2019 conducted the same research with the title "Learning Module Development Thematic Based on Character Education in Grade V Elementary School". The results showed that the level of module validity met the very valid category, with an average score of 89.35% on the test results. This category shows that character education-based modules are appropriate to use during the learning process (Riwanti & Hidayati, 2019).

Destination in make module this is for give student source power addition for help they study. Study related development module based education character who has carried out by (Wahyu Kurniyawan et al., 2021), showed that development module integrated education character after validated with category worthy used as a medium of learning, and response student obtained results with category good.

Based on what have explained, researcher give solution to existing problems with enter lesson about moral developmentzto in junior high school curriculum for student class VII. Study this entitled, "Designing Pollution Modules Environment for Character Education Class VII Junior High School".

METHOD

This module was built with an emphasis on R&D (Research & Development) during its creation. This study uses a 4D model that was created specifically for (Thiagarajan, Samuel, 1974). Some items are developed through research and development, or R&D. The purpose of this study is different from other educational studies, which often focus on the creation of finished goods. This process starts with defining the problem, then moves on to designing a solution, prototyping it, and finally deploying it, with stages *Define*, *Design*, *Development*, and *Desiminate*. 4D models are not contain many stages, so that no eat many time for learning, development module this conducted in very short time (Ismawati et al., 2018).

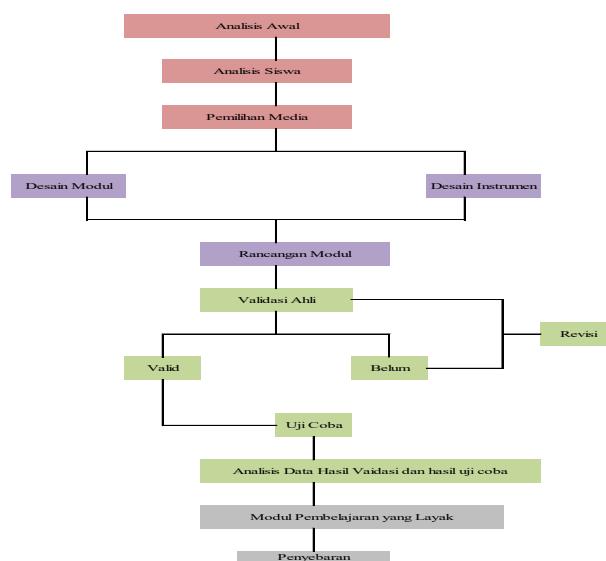


Figure 1. Order 4-D Model Planning and Development

Description :

Defines :	
Designs :	
Develop :	
Decimite :	

Stage Defines : on stage this generated from the process of observation and interviews that have been conducted to the learning process in the classroom.

Stage Designs : on stage this for make *prototype* module, which consists of of 3 stages namely: choosing teaching media in the form of module, compose objectives and drafting the module . Materials used is pollution environment .

Stage Develop : on stage this will produce module with criteria worth having validated previously by media experts, materials.

Stage Dessiminate : then modules that have been validated, then tested as well as disseminated in class VII SMP Karya mother district Deli Serdang.

Research Instruments validation in the form of sheet validation media and materials expert. And use questionnaire response to students. Category criteria percentage questionnaire informed in **table 1**.

Table 1. Criteria Media and Material Validation

No.	Category Answer	Statement Score
1	Very Good	5
2	Well	4
3	Enough	3
4	Not enough	2
5	Very less	1

Interval data later analyzed use equality following :

$$P = \frac{f}{N} \times 100\%$$

Description :

P : percentage answer

f : number the score obtained

N : amount score maximum

Next percentage results Step validation are presented in **table 2**.

Table 2. Criteria Appropriateness

No.	Percentage %	Criteria
1.	81% 100%	Very Worthy
2.	61% 81 %	Worthy
3.	41% 61 %	Enough Worthy
4.	21% 41 %	Not Worthy
5.	0% 21%	Very No Worthy

Response student to module could in the form of response positive and response negative. Learning media in the form of module could utilized for make student more comfortable if accept bait positive feedback from student that. Teacher can measure involvement student they

with modules and learning process based on how much interested student they are on topic the (Rasyid et al., 2016) .

Table 3. Questionnaire Value Category Response Student

No.	Percentage %	Criteria
1.	81% 100%	Very Interesting
2.	61% 81 %	Interesting
3.	41% 61 %	Enough Interesting
4.	21% 41 %	Not Interesting
5.	0% 21%	Very No Interesting

RESULTS AND DISCUSSION

Results

Table 4. Material Expert Validation

Aspect	Score Obtained	Maximum Score	Percentage	Criteria
Content Eligibility	37	45	82%	Worthy
Language Eligibility	20	25	80%	Worthy
Character Education Based	23	30	76%	Worthy
Amount score obtained _	80			
Amount score maximum	100			
Percentage	79%			
Criteria	Worthy			

Table 5. Media Expert Validation

Aspect	Score Obtained	Maximum Score	Percentage	Criteria
Cover View	47	60	78%	Worthy
Convenience Use	16	20	80%	Worthy
Graphics	16	20	80%	Worthy
Amount score obtained _	79			
Amount score maximum	100			
Percentage	79%			
Criteria	Worthy			

Based on the results of validation by expert lecturers are obtained value percentage by 79%. Based on **table 2** then in category module eligibility, then module this categorized as “worthy”. Based on the results of research by (Rahayu et al., 2016), states that the level of feasibility of a module based on the results of expert validation is declared feasible and can be used as a learning medium with a percentage of 83.46%. Revision on product found in some part such as cover, replace type of writing and add a number of aspects of identity module.

Table 6. Questionnaire Response Student

Aspect	Score	Percentage	Criteria
Content Eligibility	83	81%	Very Interesting
Language Eligibility	81	81%	Very Interesting
Appropriateness Benefits	77	81%	Very Interesting
Appropriateness Graphics	82	81%	Very Interesting

From the average results of the student response questionnaire sheets obtained a score of 81%, with the criteria of “very interesting”. So that it shows that the student’s response is positive to the character education-based module on environmental pollution material during the learning process. Similar research conducted by (Viorita et al., 2019) state that the average value of questionnaire response student with score percentage 97.17%.

DISCUSSION

The following are the results of the Character Education module developed: Study started with **Step define** (definition) which it does study based on results Interview against biology teachers and do observation field to implementation learning in class VII SMP, obtained problem in the learning process. *First*, implementation learning still teacher centered. *Second*, the use of school teaching materials the only use book package. Teacher yet once use modul, usually the teacher uses book package or LKS (Worksheet students) in the learning process carried out. *Third*, biology teacher the say not yet once using Character Education Based Module the as a learning medium.

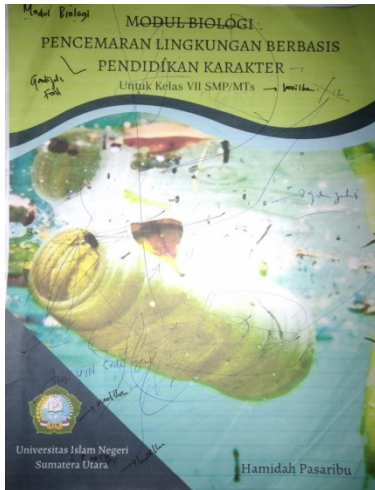
Stage design (design) is done design module based education character and instrument design in study among them sheet validation expert for see appropriateness from module, as well as sheet response questionnaire for students.

Stage develop (development) step this strive make product in the form of module based on results expert validator revision. Based on change from expert validators, modules meant for built Becomes module that can applied.

Based on findings validation obtained by the validator, the value of percentage is 79% of results obtained validation lecturer expert materials and media with “worthy” category. Similar research conducted by (Viorita et al., 2019) state that module said worthy as well as can utilized as teaching materials with results percentage 91.59%.

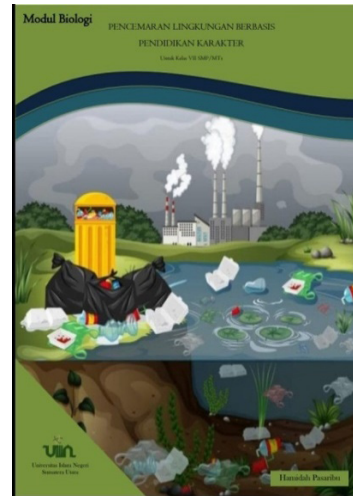
Stage dissemination (spread) based on results trials modules that have been developed worthy for distributed to students class VII SMP and biology teacher. Deployment module to student with the number of 28 students, where every 2 people get 1 module and 1 module for teachers. The results of this trial state that that module “ very interesting” whole. because of that, concluded that module based education character could applied in the process of activities learning with Theory pollution environment.

Table 7. Revision Module Validation



Picture 2. Cover Before Revision

- Changing the writing font in the title
- Replace image used on cover



Picture 3. Cover After Revision



Picture 4. Module Identity Before Revision

- Adding the word module to the title
- Change the writing font
- Add some aspects to the module identity



Picture 5. Module Identity After Revision

CONCLUSION

At stage beginning research, observation done at school . Based on results observation, science teacher at SMP Karya mother district. Deli Serdang during this utilise book lesson from school as teaching materials. Also, no there is module used as source instructional. Based on evaluation of media expert and expert validators material, category “enough” obtain average score of 79%. Category the “very interesting” module has student ‘s average score by 81%, according to findings questionnaire response students. The result, the resulting module in study this could received for used in classroom learning. The author also suggests that the development of character education-based modules can be used as a teaching medium to include material related to the biology learning process with character values instilled in students. Due to limited time, funds, and man power in conducting research, this research is not ideal. This learning module was created as an answer to students’ needs for teaching materials in biology class VII at Karya Bunda Junior High School.

REFERENCES

- Dwi, P. (2017). Pendidikan Karakter Peduli Lingkungan. *Universitas Sebelas Maret*, 1(3), 73–82.
- Efriani, P. D., Parmiti, D. P., & Pudjawan, K. (2016). *Pengembangan Modul IPA Berorientasi Pendidikan Karakter Pelajaran IPA Kelas VII Semester Genap Di Smpn 1 Negara*. 4(3), 35–45.
- Elsa, F., Khairil, K., & Yunus, Y. (2014). Penerapan Pendidikan Karakter Peduli Lingkungan Melalui Metode Inkuiri Terhadap Sikap Dan Perilaku Siswa Pada Materi Pencemaran Dan Kerusakan Lingkungan Di SMP Negeri 6 Banda Aceh. *BIOTIK: Jurnal Ilmiah Biologi Teknologi Dan Kependidikan*, 2(1), 28. <https://doi.org/10.22373/biotik.v2i1.232>
- Hasibuan, R. (2016). Rosmidah Hasibuan ISSN Nomor 2337-7216. *Jurnal Ilmiah Advokasi*, 04(01), 42–52.
- Herayana, Hadi, K., & Syamsu, F. D. (2020). Pengembangan Modul Biologi Berbasis Pendekatan Jelajah Alam Sekitar (JAS) untuk Meningkatkan Hasil Belajar Siswa pada Materi Keanekaragaman Hayati Kelas X SMA Negeri Kaway XVI. *Jurnal Bionatural*, 7(1), 61–74. <http://ejournal.stkipbbm.ac.id/index.php/bio/article/view/416>
- Hidayati, S., Muhartati, E., & Amelia, T. (2020). Kemampuan Berpikir Kreatif Siswa SMP pada Materi Pencemaran Lingkungan di Tanjungpinang. *Pedagogi Hayati*, 4(1), 30–37. <https://doi.org/10.31629/ph.v4i1.2371>
- Ismawati, M., Tegeh, I. M., & ... (2018). Pengembangan modul berorientasi pendidikan karakter pada mata pelajaran ips siswa kelas VII Semester Ganjil Tahun Pelajaran 2018/2019 di SMP *Jurnal EDUTECH ...*, 6(2018), 278–284. <https://ejournal.undiksha.ac.id/index.php/JEU/article/view/20322>
- Kibtiah, I., Hilmiyati, F., & Khaeroni. (2020). Pengembangan Modul Pembelajaran Tematik Kelas 4 Berbasis Pendidikan Karakter Bernuansa Kontekstual. *Ibtida`i: Jurnal Kependidikan ...*, 7(2), 105–118.
- Mulyasa, E. (2018). *Manajemen Pendidikan Karakter*. Bumi Aksara.
- Pramono, R. (2016). Perspektif Sosiologis Dalam Penanggulangan Bencana. *Jurnal Masyarakat Dan Budaya*, 18(1), 81–96. <http://jmb.lipi.go.id/index.php/jmb/article/view/342>
- Rahayu, D., Pratikto, H., & Rahayu, W. P. (2016). Pengembangan Modul Pembelajaran Kontekstual Bermuatan Karakter Pada Mata Pelajaran Kewirausahaan di SMK Cendika Bangsa Kepanjen. *Jurnal Pendidikan Bisnis Dan Manajemen*, 2(3), 225–232.
- Rasyid, M., Azis, A., & Saleh, A. (2016). Pengembangan Media Pembelajaran Berbasis Multimedia Dalam Konsep Sistem Indera Pada Siswa Kelas Xi Sma. *Jurnal Pendidikan Biologi*, 7(2), 69–80. <http://journal2.um.ac.id/index.php/jpb/article/view/722>
- Riwanti, R., & Hidayati, A. (2019). Pengembangan Modul Pembelajaran Tematik Berbasis Pendidikan Karakter Di Kelas V Sekolah Dasar. *Jurnal Basicedu*, 3(2), 572–581. <https://doi.org/10.31004/basicedu.v3i2.41>
- Simarmata, B., Daulae, A. H., & Raihana, R. (2018). Hubungan Tingkat Pengetahuan Lingkungan Hidup dengan Sikap Peduli Lingkungan Siswa. *Jurnal Pelita Pendidikan*, 6(4), 204–210. <https://doi.org/10.24114/jpp.v6i4.10584>
- Sya`ban, M. F., & Wilujeng, I. (2016). Pengembangan SSP zat dan energi berbasis keunggulan lokal untuk meningkatkan literasi sains dan kepedulian lingkungan. *Jurnal Inovasi Pendidikan IPA*, 2(1), 66. <https://doi.org/10.21831/jipi.v2i1.8369>
- Tarigan, R. M. B. (2012). Pengembangan Modul Tematik Berbasis Karakter Tema 6 Cita-citaku. *Tematik Universitas Negeri Medan*, 11(1), 1–8.

- Viorita, N., Holliwarni, B., & Erviyenni, E. (2019). Pengembangan Modul Terintegrasi Pendidikan Karakter Pada Materi Koloid. *Jurnal Pendidikan Kimia Universitas Riau*, 4(2), 27. <https://doi.org/10.33578/jpk-unri.v4i2.7162>
- Wahyu Kurniyawan, Muflikhul Khaq, & Titi Anjarini. (2021). Pengembangan Modul Digital Terintegrasi Nilai-Nilai Pendidikan Karakter pada Subtema 1 Suhu dan Kalor. *Jurnal Educatio FKIP UNMA*, 7(3), 1280–1288. <https://doi.org/10.31949/educatio.v7i3.1426>