



Analysis of Critical Thinking Ability Reviewed from *Adversity Quotient* and Self-Confidence Through *Problem Based Learning*

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ABSTRACT

Ability think critical is very important owned students, because think critical used for solve problem and become consideration when taking valid decision. Ability think critical must accompanied with aspect psychology For can finish problem with Good. Trust self and Adversity Quotient is one of necessary factors for optimizing abilities possessed student. Ability think critical can improved with a learning model Problem Based Learning (PBL) because pattern learning student centered which emphasizes student For role active with given something problems at the start purposeful learning For compile knowledge students, and develop Skills think student in solution problem. Focus study This is analyze ability think critical reviewed from Adversity Quotient and trust self student through the Problem Based Learning model. Research methods used in the research This is method Systematic Literature Review (SLR). With method This identify, study, evaluate, and interpret existing research. Based on study literature, PBL models can increase ability think critical student reviewed from Adversity Quotient and trust self student. Brave student take it is the decision that can be made increase ability think critical, so student must own trust tall and brave try For can finish the problem It means student own intelligence Adversity Quotient.

1. Introduction

According to Minister of National Education Regulation number 22 of 2006, mathematics is one of the eye lessons learned by students who begin from Primary School, School Intermediate even until to College. One of ability important mathematics For owned by students that is ability think critical. Ability think critical is required abilities owned participant educate in face challenge 21st century. Ability think critical This expected can overcome the difficulties faced student in Study mathematics and capable solve various type problem mathematics so that generated the right answers as well as logical conclusions . Based on existing research conducted by Fasha et al., (2018) show that ability think critical mathematical student Still classified low Because in the learning process , students Still experience difficulty in finish problems, especially those in need ability analyze and solve problem. Ability think critical is very important owned students, because think critical used for solve problem and become consideration when taking valid decision.

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Ability think critical is a guiding thought process individual in decide what was done so that reach conclusion best (Wulandari, 2019a). Think critical is ability think level height you have somebody For solve something problem with logical and precise (Sitanggang, Syahputra, & Yus, 2020) (Rohmah, Widodo, & Katminingsih, 2022) (Fasha et al., 2018). Think critical with put forward intellectualism because a Can analyze , create considerations , as well take decision in a way right and implement it in a way Correct . Ability think critical can give Lots benefit to students , incl understanding and development more concept well , and they are can develop Skills think For finish more questions complex with easy (Nashrullah et al., 2021) . Indicator think critical among them identify , connect , evaluate , and solve problem various problem mathematics (Nisa, 2022).

Ability think critical must accompanied with aspect psychology For can finish problem with Good. Trust self and Adversity Quotient is one of necessary factors for optimizing abilities possessed student. Adversity Quotient (AQ) is ability somebody in observe difficulty and processing difficulty the with the intelligence he has so that become A challenge For finish it (Nurlaeli et al., 2018) . AQ is attitude somebody in overcome difficulty and processing difficulty the with his intelligence so that become challenge For finish it (Sitanggang et al., 2020) (Wulandari, 2019b) . AQ can become indicator for measure how much strong? somebody can Keep going endure in face difficulty in struggle, until the end of the person can go out as winner, retreat in the middle road or even No Want to accept challenge even a little bit.

Someone who has a high AQ No will easy give up in overcome something problem. They always think about various possibility for reach what has aspired to as well as No will let something obstruct his business. Dominant factor forming AQ is attitude abstinence give up. Attitude this is what is necessary implanted to every student in Study mathematics to be able to do it persist and try look for solution in face something problem. AQ is One necessary thing developed in determine qualified individuals . Stoltz (Wulandari, 2019b) intelligence AQ split become three type that is type quitter, type camper , and type climber . Type quitters is individuals who do not own will for accept challenge his life. Type camper is individual who owns will for try face challenge in his life, will but stopped when No capable Again resolve it, and type climber is individual who will Keep going fight face challenge in his life until he succeed.

Additionally, aspects psychological give contribution to use accompany ability think critical in reach success student finish something problem with Good. Aspect psychological the is trust self or self-confidence. According to TIMSS (Purwasih, 2015) show that self-confidence Indonesian students still low below 30%. Self-confidence according to TIMSS ie own good math, capable Study mathematics with fast and fast surrender, showing confidence with ability he has mathematics, and is capable of it think in a way realistic. With So, you can concluded that self-confidence important For owned by students. Through Work group or discussion, self confidence can developed, here student sued For capable explore and discover Alone concepts moderate mathematics studied it.

Trust self or self-confidence is trust self to the abilities he has so that Certain capable finish something problem. Trust self or self-confidence in mathematics is trust self student to ability his mathematics . With have a sense of trust high self , student can have confidence will ability in himself To use finish something problem or his job (Pebianto et al., 2019) . Self-confidence is feeling Certain will ability itself includes good assessment and reception to himself in a way whole, acting in accordance with what other people expect so individual can accepted by others as well the environment. Self-confidence become sufficient aspect influential to success students , because self-confidence That Alone is trust self in do task and choose method good , precise and effective solutions (Fardani et al., 2021) . Whereas according to Lautser in (Surya et al., 2017) , yes a number of characteristics For evaluate trust individual , such as : believing in abilities they yourself , for Act independent in take decision , have draft positive self , and brave put forward opinion.

One of possible efforts need carried out by an internal teacher enhancement ability think critical students, that is with use appropriate method with material and objectives learning. Reason low ability think critical and Adversity Quotient student is a learning process (Sitanggang et al., 2020) . The PBL learning model can also be used become solution For overcome low ability think critical and results Study student (Nisa, 2022) . In terms of This is the Problem Based Learning (PBL) model assessed appropriate used in enhancement ability think critical student because PBL is also included in pattern learning student centered which emphasizes student for role active with given something problems at the start purposeful learning for compile knowledge students, train independence, Adversity Quotient, and trust self, also develop Skills think student in solution problem.

Based on explanation on so researcher want to examine the PBL model in increase ability think critical student from various study previous ones already done. The results of research conducted by Nurlaeli et al . (2018) shows that mathematics ability solution problem students who get the PBL model more Good than students who get learning conventional.

2. Methodology

Method used in study This is Systematic Literature Review (SLR). method research conducted For gather as well as evaluate research related to focus topic certain (Lusiana & Suryani, 2014) . The purposes of SLR include for identify, study, evaluate, and interpret all available research with field topic interesting phenomenon, with question study certain relevant ones. With use of the SLR method can done review and identification journal in a way systematic, which in every the process follow steps or protocol that has been set (Triandini et al., 2019).

3. Results

Focus study This is analyze ability think critical reviewed from adversity quotient and trust self student through a problem based learning model. Think critical mathematical is something activity systematic , logical thinking as well as appropriate with put forward intellectualism because a Can analyze , create considerations , as well take decision in a way right and implement it in a way Correct (Nashrullah et al., 2021) . Indicator ability think critical mathematical students, namely (1) Interpretation, namely categorize and classify, (2) Analysis, ie test and identify, (3) Evaluation, ie consider and judge, (4) Conclusion, ie summarize data and explain conclusion. Already Lots research conducted about Problem Based Learning model in effort increase ability think critical student reviewed from Adversity Quotient and trust yourself can seen in the table as following.

Table 1. Study previous analysis ability think critical reviewed from adversity quotient and trust self student through a problem based learning model

Article Title	Writer	Year	Results
The Influence of Learning Models Problem Based Learning To Ability Think Critical Mathematical Student Judging from the Adversity Quotient	1. Nurlaeli 2. Anton Noornia 3. Eti Dwi Wiraningsih	2018	Research result This are (1) Ability think critical mathematical given students more treatment of the PBL learning model tall compared to with given students learning model treatment conventional ; (2) Yes influence interaction between the learning model and AQ towards ability think critical mathematical student ; (3) Ability think critical mathematical given students more treatment of the PBL learning model tall from given students learning model treatment conventional in the group students who have high AQ ; (4) None difference ability think critical mathematical between given students treatment of the PBL learning model with given students learning

			model treatment conventional in the group students who have low AQ .
Analysis Ability Think Critical and Self-Confidence of Middle School Students in DAPIC Problem Solving Learning with The RME approach is reviewed from Adversity Quotient	Ika Putri Wulandari	2019	Research result quantitative show that learning effective DAPIC Problem Solving with the RME approach is effective to ability think critical and trusting self , and results qualitative show that DAPIC Problem Solving learning with RME's approach to ability think critical and trusting self quality OK, achievement ability think Kritis student quitters capable control four indicators , students campers and students climber capable control all over indicators , and achievements trust self student quitters Still believe self will but shy , student camper more brave , and students climber really believes self .
Analysis Ability Think Critical MTSN students Cimahi City on Linear Equations in Two Variables Judging from Self-Confidence	1. Acep Pebianto 2. Gugun Gunawan 3. Rebekah Yohana 4. Adi Nurjaman	2019	In accordance results analysis from sample students at Mtsn in the city Cimahi showing in a way general ability think critical student classified low. And no there is significant influence between trust students ' self - confidence to ability think critical mathematical So that need exists treatment especially for students with method give lots of stimulus questions that contain ability think critical mathematical order ability student in ability cognitive the can Keep going increase .
Think Critical Mathematics and Student Self - Confidence Reviewed from Adversity Quotient	Ika Putri Wulandari	2019	Connection ability think critical and trusting self based on Adversity Quotient student that is ability mathematical must accompanied with aspect psychology For can finish problem with Good. Trust self is one of necessary factors for optimizing abilities possessed student. Because of trust self according to TIMSS ie own good mathematics, study mathematics with abstinence surrender and show confidence to ability his mathematics.
The Effect of Problem Based Learning Model on Critical Thinking Ability Student	1. Saut Lamhot Sitanggang 2. Edi Syahputra 3. Anita Yus	2020	Research result show that : 1) exists the influence of the Problem Based Learning model to ability think critical mathematical student with mark significance $0.001 < 0.05$. 2) there is the influence of the Problem Based Learning model to Adversity Quotient student with mark significance $0.00 < 0.05$. 3) no there is interaction between learning and types sex to ability think critical mathematical student with mark

Mathematics and Adversity Student Quotient on Students at SMP Negeri 4 Lubukpakam			significance $0.750 > 0.05$. 4) there are interaction between learning and types sex on students' Adversity Quotient with mark significance $0.013 < 0.05$.
Ability Think Critical Mathematical Judging from the Adversity Quotient	1. Nita Rahayu 2. Fitri Alyani	2020	Based on results data processing, in part big participant educate is in type campers. AQ delivers influence positive to achievement ability think critical mathematical student. AQ and ability think critical mathematical own significant correlation / relationship so that there is explanation about AQ types.
Analysis ability think critical mathematical student reviewed from self-confidence	1. Pramudya Hilma Khoirunnisa 2. Princess Nur Malasari	2021	From research This can withdrawn conclusion that the more tall level self-confidence participant educate so the more good ability too think critical mathematical participant educate that, too on the contrary.
Analysis Student Self - Confidence in Learning Mathematics Through the Problem Based Learning Model	1. Zuhur Fardani 2. Edy Surya 3. Mulyono2	2021	Research result as following : (1) Trust students ' self - confidence after a problem based learning model is applied obtained that of 30 students there are 6 students who have trust self (self confidence) category high , 20 students who have category moderate , and 4 students who have category low . (2) Difficulty student in finish test intelligence logical mathematical students a) on categories high and medium, students experience category difficulty solution problem; b) on categories low, students experience category difficulty concepts and solutions problem.
Meta Analysis : PBL Learning Model Against Ability Think Critical Mathematical Student	1. Enjoy Rohmah 2. Suryo Widodo 3. Yuni Katminingsih	2022	Learning model Problem Based Learning (PBL) towards ability think critical student own Effect Size with criteria high and when look for the average of the Problem Based Learning (PBL) learning model then Average value of Effect Size = 1.47 (effect tall).
Analysis Ability Think Critical Student in Finish Problem Mathematics	Khoirun Nisa	2022	Student PBL model capable finish problem mathematics in a way think critical.

through the PBL Learning Model			
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Reviewed from table on that results from existing research done by some researcher Previously, the PBL learning model could increase ability think critical student reviewed from Adversity Quotient and trust self student. Learning model based problem own effect tall to ability think critical (Rohmah et al., 2022) . Agree with research conducted Sitanggang et al., (2020) that there is the influence of the Problem Based Learning model to ability think critical mathematics and students ' AQ . This matter in line with opinion Nisa (2022) that the PBL model is capable finish problem mathematics in a way think critical . So can concluded that the PBL model can increase ability think critical student reviewed from Adversity Quotient and trust self student.

Ability Think Critical Judging from Adversity Quotient Student

In the research conducted (Nurlaeli et al., 2018) put forward that there is influence interaction between PBL and AQ learning models towards ability think critical mathematical student . Student with high AQ own level intelligence overcome high problem. Meanwhile , students who have low AQ based on results findings study that is No there is significant difference ability think critical mathematical between given students treatment of PBL learning models and learning models conventional in students who have low AQ .

That matter agree with Based on research conducted by Hidayat & Sari (2019) , AQ provides influence positive to achievement ability think critical mathematical junior high school students and there are difference achievement ability think critical student reviewed based on AQ level . According to results study Rahayu & Alyani (2020) also AQ provides influence positive to achievement ability think critical mathematical student .

There is three type AQ delivered type quitters can said including in low AQ category , type camper including in medium AQ category , and type climber can said including in high AQ category (Hidayat & Prabawanto, 2018) . If student No brave take risk in finish problem It means student including type quitter , a brave student take risk but give up when student No capable finish the problem including type camper , and brave student take risk and struggle For finish the problem It means student including type climber (Wulandari, 2019b) . Research result Rahayu & Alyani (2020) part big participant educate is in type campers who have characteristic tenacious , persistent , and possessive courage For use solution solution different problem with student other .

Brave student take it is the decision that can be made increase ability think critical that , so student must own trust high self . The more Good trust self student so the more brave student in take decision . The more Bad trust self student so the more No brave in take decision the . When students brave take action the so student will try For can finish the problem It means student own AQ intelligence .

Ability Think Critical Judging from Student Self- Confidence

In results his research Sitanggang et al., (2020) opinion that Mtsn in the city Cimahi showing in a way general ability think critical student classified low . And no there is significant influence between trust Students ' Self Confidence to ability think critical mathematical So that need exists treatment especially for students with method give lots of stimulus questions that contain ability think critical mathematical order ability student in ability cognitive the can Keep going increas. Different with what was stated Fardani et al., (2021) students who have trust self can finish task or suitable job with the abilities he has , then matter This will impact positive to himself so that student become more sure and can increase achievements obtained .

Next Hannula, Maijah & Pohkonen in (Purwasih, 2015) state that If student own good self -confidence , then student can success in Study mathematics . Therefore That's self -confidence capable support motivation and success student in Study mathematics. Student will tend understand, discover, and fight for problem mathematics he faced For expected solution (Fardani et al., 2021) .

People who believe self or self-confidence own calm and demeanor positive in face various problem and no easy give up, have ability Good socialization, believe me to ability yourself, be brave disclose opinion, no important self Alone carry out task with good and responsible answer as well as have plan towards his future. With abilities the individual have possibility for more success in undergo life when compared to with less people or No believe self or self-confidence low.

According to McPheat (2010) in (Surya et al., 2017) conclude that trust self can continues with belief that somebody own ability For succeed in something tasks , based on There is or not they has capable do task the previously . Somebody with confidence for own confidence that they will can recover, reduce attitude negative, and experiencing attitude positive

4. Conclusions

The PBL model can increase ability think critical student reviewed from *Adversity Quotient* and trust self student. Brave student take it is the decision that can be made increase ability think critical, so student must own trust tall and brave try For can finish the problem It means student own intelligence *Adversity Quotient*.

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