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**AUTONOMY AND CRITICAL THINKING
AS AIMS OF EDUCATION**

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**CHAPTER ONE
AUTONOMY AS AN AIM OF EDUCATION**

1.1 The Significance of Aims in Education

A goal, purpose or aim is a driving force that motivates people to do something. We can say that we have succeeded in doing something if and when we have achieved our goal. Hence, this sense of purpose gives us the standard against which we can judge the condition we want to pursue in the end. I would suggest that before we do something, it is important to determine the goal of the action in question; otherwise we will not achieve a satisfactory focus since we do not have any clear direction or standard. It is through a goal or purpose that we find our direction.

People who lack such a goal, aim or purpose will simply drift in the wind. Purpose is what gives us the energy and determination required in action. We could face hardship or stumble along the way, but a clear goal or purpose will encourage us to continue to stand up and pursue our future ends. Education, in this sense, also requires a goal or set of goals in its implementation and these must be formulated clearly and with careful consideration.

Unfortunately, as Frank Furedi wrote, this essential question of educational purpose is infrequently discussed (2009: 43). Moreover, he argues that recent debates concentrate on questions such as how education should be applied, how it should be conveyed or how it should be prepared. Despite the emphasis on the important issue of the meaning of education, more often than not, the discussion revolves around ideas about different approaches, measurements and methods (2009: 43).

Here, I will examine several arguments as to why it is crucial to determine a goal or purpose in education.

Firstly, by explicitly formulating the aims of education, people will focus on the important aspects of education. John Dewey argues that an aim allows one to know, given that every activity has a determined time span and will grow and develop within that time span, what to expect from a specific activity; it allows one to have an eye to the end of the activity in question (1966: 102). R.S. Peters, in addition, writes that talking about aims in education gives clarity for educators their relevant priorities (1975: 21).

Furthermore, Christopher Winch explains the role of aims in education as follows (2008: 9):

The aims of any system of education tell us what it is for. Since they embody the fundamental purpose of education, they determine the character of everything else: institutions, curriculum, pedagogy and assessment.

Therefore, it is not appropriate if people who are involved in the education system are busy constructing the building without paying any attention to the foundations. The foundation is one of the essential parts of a building because without strong foundation the building is not solid and can be easily ruined or destroyed. If we are able to articulate our educational ends clearly, it will enable us to articulate the strategy and the standards of measuring whether we have succeeded in reaching our goal.

Accordingly, we can find the same idea in Kevin Harris, who cites Hirst and Peters in saying that by formulating our purpose we specify exactly those qualities we consider important and desirable (1999: 2). A quality, or the essential character of people, is a set standard that we want to achieve in education.

It is common in education for education to change their method and follow whatever popular methods are around in that time without having a deep understanding of why they ought to do so. They find themselves trapped in the midst of confusion and despair due to the ineffectiveness of these methods in educating and teaching. I would suggest that they return to the foundation of education and to what the aim or goal of education is for them. It may be the case that they are, in fact, lacking a strong foundation but still they construct their strategies based on whatever shaky ground they have available. A skillful architect or master builder always takes into account and lays strong foundations before they begin to design and build. Time will prove to be the test and provide the answer as to whether the foundations are solid or not.

Talking about the ultimate goal of education means talking about something beyond our immediate grasp. We cannot spell it out completely because we are not there yet. As Peters says, it is neither near at hand nor easy to reach (1975: 13). Robin Barrow argues, however, that just because analyzing the aims of educational concepts is to some extent an idealistic and even subjective issue, it does not mean that it is wholly arbitrary or without rational foundation (1999: 19):

Analysis is governed by rules in which we are as a matter of fact committed and which we neither have reason to reject nor can intelligibly do so. In arguing that education is essentially about the development of mind and proceeding to articulate that conception in such a way that we expand on what is meant, in clear terms coherently and consistently with other beliefs that we have about, for example, what humans are capable of and what

matters to us, we increase our understanding of the nature of the enterprise we are concerned with.

Barrow disagrees with the notion that what it is to be educated is impossible to implement because this kind of action is abstract and unrealistic. He insists, on the contrary, that the concept of a goal or purposes of education is part of a historical practice of significant complexity and longevity and, besides, that such a conception is built up by analysis according to certain rules of reasoning (ibid.). Furthermore, he explains it is undeniable that the perfectly educated person is not found in reality, just as notions of the perfectly just society are ideals and not representative of the real world. However, this does not, he argues, mean that these ideals are unrealistic or impractical (ibid.).

The second reason why the aims of educational activities should be clearly elaborated is that if we do not articulate such aims explicitly that we will lapse the way to extraneous ends that would claim themselves as ultimate ends, but which have nothing to do with education at all. As Barrow claims, the ignorance of educational ends lead schools to pursue extrinsic purposes of education such as to give students jobs once they graduate, to serve the economy or demands of industry, etc. (ibid.: 17). Barrow writes (ibid.: 16):

While we might have extrinsic reasons for educating people (such as to serve the economy), the fact remains that the normative force of the word is the consequence of its inherent valued objectives or aims. To argue about the aims of education is to argue about what it is to be educated.

Peters writes about the issue of extrinsic goals or aims in education, in order to help understand Peters' position on extrinsic and intrinsic goals, I will present Gilroy's explanation of how Peters deals with the goals of education (1999: 24). Firstly, Peters asks two questions: What do you mean? And how do you know? He focuses on the first question by analyzing the concept of education in order to highlight the position of educational aims. In doing so, Peters provides his now popular conclusion that education is a normative concept that describes what is intrinsically valuable by identifying the criteria that a family or set of activities must conform to.

Based on Peters' position on the aims of education, Gilroy concludes as follows (ibid.):

Given this conclusion about the concept education it follows that in attempting to understand what is meant by the aims of education one has to accept that it is the normative aspect of education that aims are picking out: that is, the aims of education are identified by nature of the norms that are part and parcel of education.

Moreover, Peters writes that answers to questions relating to the aims of educators or reformers will involve detailed definitions of what one can hope to have achieved when one is considered educated or reformed. (1975: 16). An explanation of what it is to be educated or is an intrinsic aim of education, while the extrinsic aims are those instrumental aims that are not essentially related to the activity of education itself. Peters gives the example in his writing of the aims of education for those students in schools and colleges who are taught engineering simply with an aim to increasing productivity. These students do not get an idea of what an educated person is, and as such cannot be said to be educated (ibid.). Increasing productivity is one example of an extrinsic aim as it has nothing to do with education but is in many cases regarded as being of the utmost significance. According to Peters, such an aim or goal ought to be viewed as a means or instrument to an extrinsic end which is provided by the activity. (ibid.: 17). On the other hand, being educated is an intrinsic aim of education because it pertains to education itself. Furthermore, he explains how in educational practice it often happens that some students reach objectives beyond education such as increasing productivity or some other such extrinsic ends which might in fact distract education from the essential aims of education. Barrow argues that if we do not clearly establish the aims of education, we make room for other forces to influence the objectives in such ways that may have no relation to education at all (ibid.: 19). Examples could include pressure from industry, social demands, etc.

To make the definition of an aim more clear, take the activity of cooking dinner. If you were in the kitchen making soup, mashing potatoes, the aim of cooking dinner would be found in the activity itself. The purpose of cooking dinner may be to build a relationship with a friend, but this is extrinsic to the activity itself. The aim of cooking dinner is to simply cook dinner, even though the extrinsic purpose is a means of directing the activity. Everything that happens outside of that activity cannot be considered as the aim. You do not stand in the kitchen and cut the meat in order to get a relationship; you do it to achieve the aim of cooking dinner. The aim is intrinsically found within the activity. The aim of education is no different than for the activity of cooking dinner: it is the very doing of the activity.

These are several general criteria for being educated according to Peters. First of all, one is required to have some degree of comprehension of the reasons why of matters (1975: 18). As Alfred North Whitehead wrote, a man who knows a lot about information is not necessarily an educated person (cited in Peters 1975: 18). Whitehead argues that we must be alert that we do not produce generations with inert or inactive ideas, who do not have creative minds and instead merely follow in their thinking. Consequently, we do not want that knowledge kept alive and prohibit it from becoming inert, which is the core problem of education (Alfred North Whitehead, 1949: 17). I would argue that

Whitehead idea revolutionizes the point of view this there is a greater destiny beyond our grasp and this we can articulate this in the process of formulating the aims of education. As such, he concludes that education is about acquiring the art or skill of applying knowledge and putting it to use in the world. (Ibid.: 14). In other words, school leavers should be able to apply their knowledge in their daily lives Fused on their ability to think critically. But before this can become a possibility, Whitehead says that there are certain procedures that must be carried out first prove the idea and then utilize it or make it applicable to reality. He insists that there is no shortcut in the learning process; it requires patience and mastery of details on the part of the student in addition to the acknowledgment of the single aim important subject-matter of the educational process: life itself (Ibid.: 18). I conclude this brief discussion of his thoughts on the subject by stressing that we can identify someone as an educated person if he or she is able to grasp the principles behind subject-matters and is fully competent in relating these subject-matters to real life.

According to the second of Whitehead's criteria, a person's outlook will be transformed by what he or she learns through education (cited in Peters 1975: 19). Someone can be called educated if education succeeds in giving him or her a deep insight and sensitivity such that his or her thought is not stagnant but gradually renews or transforms itself to include new attitudes and reactions. Thus, the notion of transformation in the life of an educated person is crucial, but also importantly that there is no end to this process of transformation; one develops into a reflective form of life (Ibid.: 21).

For this reason, it is incredibly important to maintain a concern that that which we acquire through education should pertain to education itself. This concern will also, according to Barrow, make the practitioners focus not on training, socialization or indoctrination but rather on educating people properly (1999: 17). There is a huge difference between education, on the one hand, and training, socialization and indoctrination, on the other. In order to grasp this difference we need to first examine the definitions of education, training, socialization and indoctrination respectively. Education is the process of acquiring general knowledge, developing the powers of reasoning and judgment and generally preparing oneself or others intellectually for mature life. Training, on the other hand, is the process of bringing a person to an agreed standard of proficiency through practice and instruction. Furthermore, it is the process of instructing newcomers in making their way in a specific social or cultural context. Finally, indoctrination occurs when we teach or socialize through imposing beliefs, theories, biases, mores and methods in uncritical or unreflective ways; that is, if we attempt to make others believe unthinkingly. In addition, we indoctrinate if we teach that which is uncertain as if it is certain. This might entail teaching what is questionable as if it is unquestionable or what is defensible as if it is indefensible. When we decide to educate

we need not necessarily indoctrinate; in fact, if we are truly educating we are not indoctrinating, except perhaps to the extent that people consciously resist the educational process.

Training, socialization and indoctrination are not necessarily what we do when we try to develop one faculty of reason. To the extent, however, that reasoning is a skill it can be trained and, as such, training can be part of education.

So far I have presented the importance of articulating the aim of education. In the following section, I will focus on the notion of autonomy as one of these aims.

1.2 Autonomy as an Aim of Education

I discussed above why it is important to formulate our aims in educating because of two reasons. Firstly, in explicitly formulating the aims of education, people will focus on the important aspects of education. Secondly, if we do not articulate the aims of education explicitly, we will leave open the door to extraneous ends which will claim themselves as intrinsic and ultimate ends, but which have nothing to do with education at all.

One of key intrinsic aims of education that we need to consider is personal autonomy. Autonomy originally derives from Greek word *autonomous*: *auto* meaning self and *nomos* meaning law. Therefore, autonomous literally means one who gives oneself their own law. The definition of autonomy is the quality or state of being self-governed especially with view the right of self-government. If we say that someone is an autonomous person then he or she has the freedom to choose and to conduct his or her own life without interference from others. As Colin Wrings argues, it is unreasonable to assume that one should devote their life to serve the aims, concerns and ambitions of another person unless they decide to do so of their own free will. Thus, for each person to obtain the capability to choose and sustain the most desired way of life for themselves and to be subject only to the obligation to respect the rights of others to do the same is a justifiable ethical principle (Colin Wrings, 1997: 115). From the perspective of modern democratic and pluralist societies, to become an autonomous person is a goal if someone wants to achieve a sufficient level of wellbeing. An autonomous person here means, therefore, someone who is able to follow his or her own direction in life (Wings, 1999:1).

Consequently, for an autonomous person there will be a range of possible choices available. We can see this in the example of someone who wants to buy a dress for her birthday party. She goes to the fashion store and the assistant shows her the range of

possible choices available, from which she needs to choose the one she prefers. She needs to consider and judge which is the most suitable for her and she is free to do so.

Christopher Winch writes that if (a) the exercise of autonomy is a fundamental feature of a meaningful life for an adult in society and (b) education is fundamentally related to the preparation of young people for adult life, then it is logical to suppose that it will be primarily concerned with the development of autonomy (2006: 6). In addition, he explains that there is an assumption that children cannot be considered as autonomous at birth but that they will develop their autonomy if they acquire certain appropriate attributes (ibid.). On the basis of this, I would agree with John Stuart Mill, as cited by Hugh LaFollette, that human beings need to exercise their faculties of perception, judgment and moral preference by making a choice, because these faculties will improve only by being used (1999: 148). Education at schools and at home has an important role in exercising children in becoming autonomous. It begins with the perspective that the only way children can learn to become fully autonomous is by first being permitted to act on their growing descriptive autonomy. LaFollette introduces two kinds of autonomy: descriptive autonomy and normative autonomy (ibid.: 139). Descriptive autonomy relates to the question of whether children have the rational and experiential wherewithal to make informed decisions about their future, whether normative autonomy pertains to questions about whether parents should permit children to make decisions about their futures and whether the state should legally protect children's prerogative to make decisions about their futures (ibid.: 139). Thus, if parents give children permission to operate on their growing descriptive autonomy, they assume that their children have the capability to make decisions based on their own rational faculties.

In addition, LaFollette suggests that we should consider viewing children as having a circumscribed normative autonomy, though in three different phases: administered autonomy, monitored autonomy and minimally constrained autonomy (LaFollette, 1999: 149). The first and lower stage is administered autonomy. At this stage, the parent gives the child certain tasks and waits for the child to perform them. The parent tries to let the child obtain a sense of making choices and of taking responsibility in small issues. For example, the parent expects the child to store his or her toys inside a box after playing with them. The second step is monitored autonomy, whereby the parent gives the child greater responsibilities and, to some extent, lets the child deal with the outcomes of his or her decisions. In addition, parents stand ready to interfere if the decision brings about an unsafe situation for the child. When a child grows older and his or her intellectual and rational faculties have been better developed and his or her emotional state becomes stable enough to make wise preferences. In general, parents must

grant him or her greater autonomy. This stage is called minimally constrained autonomy. The parent interferes infrequently at this stage. Of course, parents cannot skip stage one and two if they want the child to perform at stage three. Children used to go step by step through every stage in order to become fully autonomous. Unfortunately, there are many cases where children do not go through these steps and, as a result, do not live to their full potential. Although this discussion seems more directed at parents, educators used to understand that perspective and take it on board as a consideration about how to view the child and the student.

According to LaFollette, a child should go through several stages in his life before arriving at full rationality and to my mind it ought to be the responsibility of parents to recognize and develop autonomy and rationality because parents are the closest and most influential people in the child's life. The parents, in this regard, should be fully aware and sensitive enough to determine every stage of the life of their child. Parents also need to design the form of learning and training that they will give at every stage of autonomy (administered autonomy, monitored autonomy and minimally constrained autonomy). Moreover, parents need to see themselves as educators who give exercises in autonomy to their children. If parents do not apply gradual autonomy, encourage the children to make decisions, let him or her live with the consequences of decisions, there is the danger that the child's rational and autonomous 'muscles' will become paralyzed and will not function properly later in life. We cannot deny that they will make mistakes from time to time but Dworkin is correct in saying that we have to provide space for people to make mistakes (Freeman, 1997: 97). Furthermore, Michael Freeman observes that it is unacceptable to respect children's autonomy only if they are following the right course of reason. (ibid.) Some parents may be afraid of giving their children the opportunities to exercise their autonomy due to the risks and faults that will no doubt occur; but which is worse, to give children a chance to learn how to manage their own life although they make mistakes now and then or to make them dependent on others and paralyzed because they never or seldom try to think for themselves? I would argue that the second situation is less desirable.

However, we must also be aware of the fact that if we allow a child to act in a certain manner (such as using hard drugs or refusing to go to school) that would, as a consequence, badly damage their development, we would put that child's integrity in jeopardy (ibid.). In this case, parents must be wise in the sense that they know when to give children the freedom to do something according to their own opinions and when to limit their freedom. I would suggest that there must be a sort of memorandum of understanding between parents and children whereby they both agree that in each case when parents see that something dangerous will happen to the child the parents will withhold their freedom for a while. In many cases children regret these situations when

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their parents human quiet and permit these to do whatever they want even though the parents, as the experienced party, probably knew what the right thing to do was. This is somewhat ironic; perhaps the child says to him or herself that he or she wishes that the parents would have said not to do this or that, because then this misery would not have befallen the child. We cannot deny that a child is an inexperienced person who necessarily needs to learn from the parents. That they are also ignorant means that many things that they do, they are not fully aware of. Many facts and consequences that do not cross their mind when they do something sometimes result in regrets due to that ignorance. It is for this reason that it is important to give them role and discipline based upon their agreement and their understanding of their rights.

R.T. Allen also speaks about young men and here they are in a state of ignorance and need guidance from their teachers. He suggests that teachers must exercise direction, compulsion and authority upon and over young men during their state of ignorance in order to bring these to the goal of rational autonomy (1992: 49). His advice about exercising direction, compulsion and authority is understandable since children do require supervision on their journey to autonomy, for otherwise they will go astray. Teachers should know very well that their educational aim is to guide and lead the student through the process of becoming an autonomous person who is able to think and decide for him or herself. Such an awareness is crucial because something motivated by a clear purpose will bring about good results compared to something accidental.

There are many ways to generate the improvement of autonomy. Piaget, as described by Constance Kamil, suggests switching between the points of view of the educators and parents with children as one of such ways (1982: 411). Kamil points out that 'when a child tells a lie, for example, the adult can look the child straight in the eye and say with combination of skepticism and affection, 'I really cannot believe what you are saying because...' (ibid.). Hence, switching points of view is vital in deriding children's autonomy. When the child knows that they are lying it can make them think about what they must do in order to appear reliable. In this case, they learn an important lesson in life that it is good to speak the truth to one another, otherwise it will be used for them to become trustworthy.

For Piaget, it is not proper to give children rewards and punishments because it will strengthen their atypical heteronomy and inhibit them from building autonomy (ibid.). In his writing, he introduces the word *heteronomy* to refer to someone who is controlled by someone else. There are three possible outcomes of adults punishing children. The first and most common outcome is that children will count on the risk because adults occasionally say to children that they don't want these to do this or that any longer (ibid.). The children will even calculate doing those things even though it is not allowed simply due to the pleasure the action gives as a result of the risk obtained. In my opinion this

method will not succeed since the primary message (or lesson) that the parents are trying to communicate is not delivered. The child does not succeed in realizing his or her mistakes and fails to admit to them. Consequently he or she cannot change the behavior since the honesty towards oneself about his or her own faults is not established. On the other hand, the child thinks that the pleasure he or she will get outweighs the consequences of being reprimanded by the parent.

Secondly, children become total conformists who always obey their parent's commands. They sustain from making decisions and become passive, seeing that conformity brings security and respectability (ibid.). In other words, when they learn that conformity leads to acceptance, they begin to become addicted to pleasing people and looking for their approval without the awareness that it becomes a bad habit in the future. The child will learn in precisely the wrong way: instead of admitting his or her mistake and altering his or her attitude appropriately, he or she will simply admit without further consideration what he or she has done. He will turn out to be lazy when it comes to clarifying facts. Although he or she is faced with the negative things people confront him or her about, he or she will simply please them with submission. I will call this kind of person a people pleaser. This is someone who will avoid confrontation even when it is urgently called for. Confrontation, in a modest way, is sometimes necessary, although that does not mean that one ought to be rude or ill-mannered. Instilling a willingness to face up to confrontations should be done for the sake of the child's own future. If we care enough about someone, we will tell them the truth even though it may not be pleasing to do so because we care more about that person's future good than his or her current and temporary pleasure. In addition, this kind of child will find it difficult to form his or her own opinions because he or she becomes used to passively accepting the opinions of others.

Thirdly, in addition to the problem of conformity, such an approach also raises the possibility that the child becomes a rebellious person. After years of blindly obeying, they may get used to pleasing their parents and start to act rebelliously (ibid.). Similar to punishment, rewards also bring bad consequences for children's autonomy. For instance, as a result of the motivation to earn money, children help their parents. There is little difference between this type of child and the first type. He or she will fail to grasp the intended message from the reward. These consequences fail to make him or her admit and regret the mistake he or she has made. In the beginning, he or she may very well submit to this influence but he or she will soon get bored and initiate a rebellious attitude. Entailed by this rebellious attitude is the fact that one is not gifted with the patience required to listen to the advice and suggestions of others. The child will come up with arguments in defense of his or her stand. Of course, having an argument for a particular

position is not necessarily negative; but in this case an openness towards accepting advice is required while stubborn argument will block the message.

These three results have one thing in common: the child will learn an inappropriate form of behavior from the given punishment or reward. It is for this reason that it is important for parents to be sure of the essence of their teachings so that it will be well conveyed to the child.

Piaget realized that it is indeed impossible to avoid punishment (Kamii, 1982: 411) (because in reality the child must make a mistake which can endanger himself; e.g., secretly leaving the house and crossing a main road). According to Piaget, instead of punishing the child, it is better to sanction him or her through reciprocity. Kamii gives the following example (1982: 412):

Depriving a child of dessert for telling a lie is an example of punishment, because the relationship between lie and the dessert is completely arbitrary. Telling the child that we cannot believe what he or she says is an example of a sanction by reciprocity. Sanctions by reciprocity are directly related to the acts we wish to discourage and to our adult point of view; these sanctions motivate the child to construct rules of conduct, through the coordination of viewpoints.

Hence, Piaget suggests that parents and educators had better encourage children to construct moral values for themselves, rather than applying rewards and punishments, if they want to see children become autonomous. It is possible for a child to think about the importance of honesty, for example, only if he or she is confronted with the fact that other people cannot trust him or her. (Kamii, *ibid.*: 411).

Kamii (*ibid.*: 413) regrets that teachers do not often motivate children to think autonomously. He criticizes those teachers who make children distrust their own thinking as a result of the way they are taught. Instead of marking the answer as incorrect, Piaget suggests that teachers encourage those children who come to dissimilar answers to explicate to one another why they choose the answers they did. He encourages the teacher to ask the child, 'How did you get 5? Children often correct themselves autonomously as they try to explain their reasoning to someone else as in the process of explaining they have to decenter themselves; this is, they must try to coordinate their points of view with those of others. In doing so, children often recognize their own mistakes' (*ibid.*). Hence, Kamii concludes that if teachers emphasize only the right answers given by the students without concern for how they learn something from the activity that is essential in forming their own opinion, it is ineffective in constructing the students' autonomy. Moreover, he argues this only by respecting children's ideas.

including the wrong ones, can they intellectually develop and improve their autonomy. In addition, they can improve moral autonomy by paying much more attention to the process of making decisions as well. It is also important, he writes, to note that children mobilize their intelligence and the totality of their knowledge when they are required to take a stand and confront opposing opinions (ibid.: 414). I agree that children are supposed to learn to construct their own ideas from an early age, and that parents and teachers must provide the appropriate environment that encourages respect for the children's (children) opinions so that they can have an inner confidence about their own thinking. To become a confident person cannot be achieved overnight; it is a long journey that demands a good foundation, a foundation of trust and positive statements from adults; indeed, how can a young boy or girl grow up with confidence in his or her own self and abilities if his parents do not believe in him or her. It can and does of course happen that adults do not intend to not respect their children's opinions, but in such cases they are unaware of the consequences of not providing more room for children to speak their own opinions.

In the above paragraphs, I have presented the arguments as to why autonomy is an important aim of education. However, there are some critiques of this position which ought to be addressed.

1.3 Critiques of Autonomy as an Educational Aim

There are, of course, some critiques of autonomy as an educational aim. Firstly, there is the view that the notion of autonomy will potentially lead to an extreme form of subjectivism whereby choices relating to forms of life are considered as an existential leap grounded in immediate desires rather than serious and considered reflection (Christopher Winch, 2009: 2). As a result, although such a version of autonomy seems to be giving unrestrained rights without external force, not many would want to apply this kind of autonomy.

It is understandable that educators may feel particularly awkward about a subjectivist construal of autonomy. Although all educators believe that children should be raised to make important choices in an informed and rational manner. That is why children ought to be provided with the knowledge required to make decisions and with the critical capacity to evaluate various options. This is indeed the noblest duty of education (ibid.: 3).

To avoid the pitfall of subjectivism, my agreement is given to the view whereby one should base his or her autonomy on rational reflection. Through rational reflection, the principles of argumentation which are objective in nature and valid anywhere are

revealed. In this regard, education plays an important role in establishing one rational consideration.

Another criticism James from Michel Foucault, as describes by James D. Marshall. Marshall explains (1996: 101):

'Foucault believes that modern self is not free because insofar as it is the outcome of the human sciences, political control and not freedom has been the aim.

He continues as follows (ibid.: 103):

The autonomous person has an autos which is permeated by the nomos. For Foucault the very notion of independence is false, because the autos is contaminated by the aspect of nomos. It cannot deliberate independently upon the laws or set the laws because it, itself, has been in part set by the laws. The autos can deliberate, true, but only in certain ways which have been determined by the infiltration of the autos by aspects of the nomos. It is an autos, or self, contaminated by the laws and principles of the nomos.

Marshall points out that, for Foucault, the quest of personal autonomy is useless since it masks the fact that any such persons have been formed by political acts. He argues this in reality we are not free as modern power, through the technologies of domination of the self, has shaped individuals who are governable:

For Marshall, the very concepts which we use to construct our identities are such as to make independence and autonomy illusory. Hence, education via governmentality effects the production of a new form of subject; one who believes they are free. Such an education simply introduces a new form of social control and socialization, as well as new and more insidious forms of indoctrination where a belief in our own authorship blinds us to the conditions of our own production and constitutes an identity that makes us governable. In this way, 'selves' emerge as 'pathologized' into certain types of human beings which are discursively constructed (<http://www.philosophy-of-education.org/pdfs/Sunday/Olsson.pdf> : 1).

Marshall's critiques provide a good lesson to be aware of and we must guard against autonomy becoming a new form of social control, socialization and indoctrination. But nonetheless, autonomy remains a good concept as an aim of education. Autonomy reminds education, parents and the state that they must create an space for children to develop their thinking in making decisions and taking responsibilities. This goal may be unreachable but it will make those involved in the business of education work harder and in a more conscientious manner. In addition,

determining autonomy as an educational goal keeps educators on the track of producing autonomous persons who are not merely followers but able to form their own opinions.

I would argue that becoming autonomous is one of the main ingredients required in comprehending the reason why of matters since if one does not care about choosing his or her direction when presented with several options, he or she will not have enough curiosity to achieve this level of understanding. Curiosity is a kind of 'appetizer' which will bolster the desire to understand the reason why of matters. This appetizer comes from one's desire to conduct his or her life without interference from others. Provoked by the desire to lead her or her life, the autonomous person feels the need to know what the real case is and get to the root of the matter, as it were. Afterwards, apprehension will open the door to go to the transformation into new attitudes and responses toward the matters. It takes time, but surely it will come.

CHAPTER TWO

CRITICAL THINKING AS AN AIM OF EDUCATION

2.1 The Relation between Autonomy and Critical Thinking

In Chapter One I discussed the importance of autonomy as an aim of education. In this chapter, I intend to discuss the relation between autonomy and critical thinking; the two being closely connected in education.

Firstly, to become autonomous, one needs to learn how to think critically. Christopher Winch argues that the use of critical thinking is significant for the development of autonomy. Furthermore, he writes that an autonomous individual must be able to critically reflect on the various options available when making decisions. An autonomous person is defined as one who has the ability to make rational decisions. 'If one is presented with choices and asked to make an informed and rational judgment, it is essential that one be able to evaluate the various consequences entailed by each choice' (Christopher Winch, 2006: 4). Therefore, to become an autonomous person one should be able to think critically so that he or she can choose appropriately based upon his or her judgment of many choices available. Winch also introduces the term 'rational autonomy' which refers to the autonomy that is necessitated by the structure of informed desires. Due to the fact that autonomy is rational it is recommended as an educational aim or goal. Rational autonomy assumes the structure of individual goals and values that are meaningful and which can be justified against the backdrop of a meaningful life. So, the autonomy that is explained above is not an absolute or young autonomy, in which persons can decide whatever they want in the name of freedom, but rather autonomy based on rational judgments.

Secondly, the critical thinker must be autonomous. Harvey Siegel argues this 'the critical thinker must be autonomous; that is, free to act and judge independently of external constraints and on the basis of his or her own reasoned appraisal of the matter at hand' (Harvey Siegel, 1988: 54). This means that to become autonomous is a key requirement for someone who wants to be able to think critically. In being autonomous,

one has the freedom and independence to determine one own decision because there is no external force at play. This freedom and independence is required for thinking critically since were one to have no such attributes, one may not necessarily have the initiative to form one's own opinions. Therefore, I would argue that autonomy will encourage one's self-confidence, a primary resource of critical thinking.

Due to the relation between autonomy and critical thinking, besides supporting autonomy as an aim of education, I would also recommend critical thinking as educational goal.

2.2 Character of Critical Thinking

In order to understand the character of critical thinking, it is important to know what exactly critical thinking is. One of the most well-known and well-used definition comes from John Dewey, who described critical thinking as reflective thinking. He defines reflective thinking as follows (1933: 9):

Active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends constitutes reflective thought.

To explain this active process, John Dewey compares it with passive processes in which we just follow the opinions of others (Alec Fisher, 2001: 2). Critical thinking is an active process whereby we think for ourselves in order to gain an understanding of a particular phenomenon. Furthermore, he contrasts persistent and careful thinking with unreflective thinking which causes one to jump to a conclusion or make a decision without thinking about it.

Moreover, Siegel characterizes the critical thinker as one who is appropriately moved by reasons and he emphasizes the critical thinker theory of the epistemic criteria according to which reasons must be judged in order that they be classified as good reasons; that is, reasons that warrant beliefs, claims and actions (cited in Sharon Bailin and Harvey Siegel, 2003: 181). In this sense, one is encouraged to evaluate the probative strength of reasons and to determine whether the reason is in fact a good reason.

According to William Hare, someone who thinks critically should be able to identify and examine the assumptions which lie hidden in a position. Critical thinking shares this characteristic: it studies and evaluates claim to knowledge, normative principles, theories, policy recommendations and other matters where judgment is

required. Moreover, it helps one decide whether what is presented as evidence and relevant argument merits being considered as such and whether it is biased, inadequate, misleading or otherwise deficient (William Hare, 1999: 90).

According to Winch, there are two versions of critical thinking. The 'account version' of *techné* (technique) and for 'enactive version' (2006: 59). According to the account version of technique, critical thinking includes the application of principles of reasoning, fallacy detection and argument criticism regardless of the context in which they are implemented.

Furthermore, according to the enactive version, Winch writes, critical thinking is always connected to an appreciation and taking account of the specific features of the rhetorical circumstances in which critical thinking skills are implemented. Following on from this, Winch argues that the enactive version is most appropriate for our understanding of the relevance of critical thinking skills to the negotiation of rhetorical context. I support Winch's account because to be successful in implementing critical thinking means to be successful in applying it in context even though the context or situation always changes. In this sense, a critical thinker has a kind of flexibility to be able to adjust him or herself to every situation due to the faculty of creative and critical thinking. He or she does not panic when the situation is not identical to the situation in his or her studies because he or she knows what the appropriate thing to do is.

Winch does not agree with Siegel who appreciates the need for an account of the virtues as well as the skills that must be developed in order for one to be a successful critical thinker. He maintains that an account of such virtues is necessary, but in the enactive account they form a part of the *techné* rather than something additional to it.

Furthermore, Winch argues that there is little consensus about what exact characteristics an autonomous person requires (2006: 6). Some advocate critical thinking as a central curriculum subject and claim that the ability of someone to think critically demands the ability to think critically about choices. An autonomous person should be able to think critically when it comes to decision making. On the other hand, others defend the idea of critical thinking as a central autonomy-promoting subject and that the ability to think critically is not just a skill or set of skills but is the completeness of character or attainment of virtues that allow the ability to be trained in a responsible and productive way. This requires that attention be paid to the truth, that others' opinions be respected and that one maintains a willingness to accept conclusions, in addition to the technical skills of argument analysis and construction.

Accordingly, Hare speaks of an open-minded attitude as an important attribute if one wants to be able to think critically. Hare explicates this with the following (ibid.: 91):

Open-mindedness suggests a willingness to take relevant evidence and arguments into account in forming our beliefs and values, and being willing to consider what can be said against the views which we now hold, altering or rejecting them where necessary. Of course, it can only come into meaningful play if we also possess the relevant abilities and understanding which enable us to review the evidence and arguments intelligently, or at least the ability to develop or hit upon the necessary tools to do so.

When one has this attitude, it means that he or she has the willingness and humility to accept revision and rejection in the light of further reflection. In other words, he or she is open to listen to others' opinions and adjust his or her own if necessary.

2.3. Critical Thinking as an Aim of Education

Although critical thinking was neglected by philosophers for more than 2,000 years, many theories and practitioners now hold it up as a philosophical and educational goal. Hare explains: (ibid.: 86)

The current obsession has created the impression that we have suddenly, and at long last, seen through the deficiencies of traditional education which have blinded us for so long to the insight we have now achieved. We have stumbled out the cave into the daylight. If however critical thinking really is a central aim of education, it would be remarkable indeed if this were a discovery of the late twentieth century, having somehow eluded philosophers for more than 2,000 years.

To hold critical thinking up as an aim of education means to regard the construction and evaluation of reasons as the most important aspect and as that which characterizes the whole curriculum (Bailin and Harvey, ibid.: 188). For Israel Scheffler, according to Bailin and Siegel, rationality is a matter of reasons, and to take it as a fundamental educational ideal is to make as pervasive as possible the free and critical quest for reasons in all realms of man. Moreover, Bailin and Siegel argue that encouraging students to develop the skills required to judge the probative strength of reasons, is a central task included in educating students about critical thinking (ibid.: 188). Hence, if educators view critical thinking as an educational goal, they will encourage students to clarify their ideas, strengthen their arguments and develop a solid pattern of reasoning.

Similarly, Siegel suggests that critical thinking should be viewed as an educational ideal. As an ideal, critical thinking not only governs our educational activity but also sets the goals of our educational endeavors. It provides the answer to two major normative questions in the philosophy of education: When is education for? And how should we educate? (Cited in Stefaan E. Cuypers, 2004: 78)

There are several reasons why critical thinking is considered a fundamental educational standard, according to Hare (ibid.: 85). First of all, much-publicized reports say that mindless rote learning still occurs in numerous classrooms where students are incapable of practicing their abilities in problem solving and where students are not appreciated or treated as persons with intellectual independence. Critical thinking will give students the ability to apply knowledge in daily life. As an educated person, the student is required to be able to grasp the principles behind subject matters and have the competency to relate subject matters to real life. As Alfred North Whitehead says, education is the acquisition of the art of utilization of knowledge (1949: 4). Sadly, many students experience a gap between the knowledge learned in the classroom and practical life. Critical thinking will prepare the students with necessary skill to bridge this chasm.

Furthermore, in the learning process, teachers are also required to treat the students as persons; as Siegel argues, teachers are morally responsible for showing respect to students and engendering the feeling that they have equal moral worth. He writes that this concept of respect for persons is a Kantian one, for it was Kant who urged that we treat others as ends and not simply as means (ibid.: 56). Respecting students as persons is necessary since if we treat others as tools it means that we manipulate them for our own self-interest. In the educational realm, if teachers regard students as equals then they will appreciate the children's right to have and form opinions, ask questions and propose reasoning about the subjects that are taught by the teachers. To this end, teachers should not indoctrinate students and force them to trust something without further consideration. In other words, teachers ought to first and foremost encourage students to think and speak for themselves. Doing so competently requires judging in accordance with the criteria governing critical thinking (Baiffa and Siegel, ibid.: 189).

Second of all, there is a common belief that students need to have flexibility, creativity and autonomy (which they obtain through critical thinking) in order to face an uncertain future in the world. It is undoubtedly true that the world always changes and thus we cannot guarantee what will happen in the future. Students, as members of

younger generations, have to adjust accordingly to these new situations that at many times may arise unexpectedly. In order to be prepared for such an adjustment, they must necessarily be flexible and creative.

In terms of fostering critical thinking as an educational aim, Siegel (ibid.: chapter 3) and cited in Bailin and Siegel, ibid.: 189) argues that critical thinking has always played an essential part in the rational traditions of educational activities and in mathematics, science, literature, art, history, etc. Moreover, Siegel explains the following (cited in Bailin and Siegel, ibid.):

... All these traditions incorporate and rely upon critical thinking; mastering or becoming initiated into the former both requires, and is basic to the fostering of the latter.

As such, we learn from history that critical thinking is always required in every form of educational activity. We should not forget these important lessons if we want to maintain good results in learning processes. In the past, critical thinking has proved itself to be the main ingredient in the business of education. It has always been involved in every how revolution in educational practice.

Siegel argues that critical thinking deserves to be an explicit educational goal because it will provide students with self-sufficiency and set them up for adulthood (ibid.: 57). Students need assistance in the journey to maturity because they are unable to yet fully control their life. In this process, teachers and parents should direct children towards attaining the self-sufficiency that they will need for their future. Education that emphasizes critical thinking as its end, according to Siegel, will fulfill for students' self-sufficiency. It is through critical thinking that students are taught to be competent judges who can scrutinize respective reasons and claims (ibid.: 58). In addition, he believes that by becoming self-sufficient persons; students become liberated persons: such a person is free from the unwarranted and undesirable control of unjustified beliefs, unsupported attitudes and a paucity of abilities, all of which can prevent that person from competently taking charge of his or her own life (ibid.).

In addition, critical thinking should be promoted if we regard democracy as a valuable political system because in democratic life, citizens must be capable of critical analysis and good reasoning concerning political issues and public policy (Bailin and Siegel, ibid.: 189).

Siegel explains (ibid.: 60):

The democratic citizens require a wide variety of the many things which education can provide. She needs to be well-informed with respect to all sorts of matter of fact; to grasp fully the nature of democratic institutions and to embrace fully their responsibilities; to treat her fellow democrats as equal partners in political life, etc. she also needs to be able to examine public policy concerns; to challenge and seek reasons for proposed changes (and continuations) of policy; to assess such reasons fairly and impartially, and to put aside self-interest when it is appropriate to do so; and so on. If the democratic is not a critical thinker, she is significantly hampered in her ability to contribute helpfully to public life. Democracies rely for their health and well being on the intelligence of their citizens.

I would agree with the idea that a democratic nation requires critical citizens in order to succeed in its purpose. It is a must that citizens in such a democratic society comprehend how to reason and form critical opinions because democracy is a form of government in which all eligible people have an equal say in the decisions that affect their lives. This includes equal (and more or less direct) participation in the suggestion, development and passage of proposed legislation into law. As such, if some citizens do not participate actively, then the purpose of democracy will not be achieved.

There are at least three justifications of why critical thinking is essential as discussed by Hare (ibid.: 94). The first justification is the ethical concern that each person has the potential to make the decision that affects his or her own life. In many cases, children are mistreated because they receive no opportunity to fully express or determine their own preferences. As a result, these children will not gradually develop into autonomous adults. In fact, children are persons and as such have the capacity to think for themselves. Accordingly, Siegel writes that teaching is a critical manner is simply teaching in such a way as to treat students with respect; the obligation to treat students with the respect they are due as persons thus constitutes a reason for adopting a critical approach to education (Siegel, ibid.: 57).

The second justification is a pragmatic one. Critical thinking, in this sense, is expected to engender in the child a specific sort of attitude such as flexibility or creativity. For example, students properly educated will be able to cope with working requirements and unforeseen situations that they have not learned about specifically at school.

The third justification is the intellectual reason, as explained by Descartes. By learning to become a critical thinker, students will not take for granted every opinion that

is provided by a philosopher, scientist or other expert. They are expected to evaluate and examine each claim carefully and to engage with practical situations on the basis of a real understanding of the subject. As a result, they gain not just theoretical knowledge but also practical expertise.

2.4 Skills in Critical Thinking

According to Hare, there are four essential skills in critical thinking (ibid.: 89). First of all, the ability to examine and evaluate situations that require careful assessment. This skill includes being able to determine whether a given problem is real or unreal. In daily life, we often face an incident which seems like a problem but we ought to take care because it might not in fact be a problem. If we treat an incident or situation like a problem when it is actually not one, we just create more work for ourselves, which forms only one part of unavoidable process (Lauren Starkey, 2004: 12). To support this statement, Lauren Starkey gives the following example: Someone trains a new employee at a bank for two weeks. During the training, he or she creates some problems but it does not mean that his or her superior must be involved in the training. It is not necessary since making mistakes in the first week is normal and understandable (ibid.).

Furthermore, Starkey dissects the problem into two parts: i.e., based on its severity and importance. He argues that severe problems can be recognized by several characteristics: require immediate solutions, may call for the involvement of others who have more expertise than and can result in increasingly drastic consequences the longer they remain unsolved. He gives the example of a leak in a house. Some water will continuously leak or even gush out until the leak is repaired. The water can damage the hardwood floors, carpeting, furniture and walls it comes into contact with. If you are not a plumber, you will require one to help you in solving the problem. Ignoring the issue just causes more damage (ibid.: 13). This means that we have to react to the problem by asking for the opinions and assistance of other people who are competent when it comes to solving the problem at hand. If the problem is not solved quickly, it becomes more complicated to fix. However, if we ask another person to solve the problem, an expert, the damage can be avoided.

In addition, Starkey argues (ibid.) that problems should be regarded as important or unimportant with respect to personal priorities. We need to put the first thing first. Failing to determine priorities will result in wasted time and energy. It is most desirable if we can rank the problems according to the degree of importance. For instance, we are

planning a birthday party in a restaurant. We need to prioritize what we want to do first. Making a list of the people we are going to invite, reserving a restaurant, buying a birthday cake and inviting friends.

The second of Hare's essential skills is the ability to decide whether a certain claim is valid or biased. Some arguments may not be relevant but the uncritical person may accept them without further consideration. This skill is essential in daily life, for example, when reading news or opinion in a newspaper. If we have the skill to understand which statements are valid and which are biased then we will not be deceived by incorrect argumentation when it is presented to us. Statkey (ibid.: 13) explains that biases are beliefs that result from people being unable to take an objective stance towards something. As such, their minds are closed and inflexible when it comes to receiving opinions from others. Therefore, bias cannot control the opinion of the critical thinker. We must be able to recognize which claims show a bias. Let us take the following example. A governor catches his son in law committing corruption. The governor thus tries to cover the corruption up. This means that the governor's feelings towards his son in law cause him to be biased and he makes the wrong decision.

The third skill of critical thinking is being able to judge opinions independently without remaining attached to previous discussion or certain public opinions. Hare says this one must resist the imposition of ideas which are taken for granted in the prevailing intellectual and social climate (Hare, ibid.: 90). This skill is important because previous discussions are not necessarily able or valid as arguments. We must take care that we do not construct our beliefs based on erroneous opinions. It often happens that preexisting ideas influence people in developing a valid argument or arriving at true belief. In this case, true who thinks critically of course still requires knowledge of other, previous opinions but he or she does not receive the knowledge uncritically; he or she will instead consider it carefully. In education, I would argue that this does not mean that students do not need subject matter but rather that they need to be educated to be critical towards subject matter. This attitude will allow them to avoid the trap of mindless rote learning.

Moreover, a crucial element of this third skill is to recognize attempts at persuasion in order to respond to them in such a way that you are not manipulated but continue to think independently. It is common that people use persuasion to convince others. For example, advertisements persuade people to buy their product or follow their styles. In this case, we need to be aware of these strategies and should not allow ourselves to be manipulated by them.

According to Starkey (ibid.: 71), persuasion is the act of using argument, reasoning or appeal to influence someone in changing his or her perspective or opinion. People try to convince others to do things their way, to think like this think or even simply ignore these. We use persuasion techniques on a regular basis, whether we realize it or not. We are, of course, often the target of persuasions as well.

Starkey (ibid.: 72) explains persuasion techniques from Aristotle's point of view. In the *Art of Rhetoric* (meaning persuasion through language), one of his most famous works, Aristotle states that there are three effective techniques of persuasion: as appeal to reason (*logos*), as appeal to emotion (*pathos*) and as appeal to character (*ethos*). Similar persuasion strategies are among the most popular and frequently applied today.

Logos or appealing to reason is effective because most people are convinced that they are logical and reasonable: you assume that you engage with things in a logical manner and thus create your argument based on the assumption that any logical, reasonable individual would approach things in the same way you do. An appeal to reason might begin with something like the following: 'We all know that if we don't do this, then that will occur as a result.'

Aristotle acknowledged that there are non-rational components of human behavior such that logic cannot be applied to everything we do. Emotional appeals are made up of three different approaches. First, the speaker hopes to affect others by expressing his or her passion on the subject. Second, the speaker tries to get an emotional response from the listener. Third, the speaker expresses his or her own emotions and works at the same time to control those of the listener. To take an example, environmental groups frequently use this appeal: 'Many crocodile babies cried because their mother was killed for her skin. Can you imagine this happening to our children?'

In addition, Aristotle focuses on the character of the speaker: appealing to characters such as being trustworthy, honest and/or intelligent are essential when persuading a listener. The speaker creates a sense of credibility by showing a worthy attitude and behavior such that he or she can be trusted and believed by the listener. For instance, from my experience as a marketing manager for a telephone company for 10 years, I know how to make the customers trust me; I always give them the best service and listen to their complaints.

Here's final skill of critical thinking is to view issues from a different point of view and to provide a new framework contrary to the current framework. Hence, someone who thinks critically is able to apply his or her knowledge in real life and adapt

him or herself to every situation. For example, one who studies economic agriculture could create new products from raw materials which have added value. Due to his abilities in creative and critical thinking, he is able to find opportunities even in the midst of difficult conditions. He can change garbage into gold, to speak.

The four skills mentioned by Hare are essential and students must learn them in order to prepare themselves for the future.

2.5 Critiques of Critical Thinking as an Aim of Education

There are some critiques or doubts concerning critical thinking as an aim of education to which I now turn. I draw here on Hare's discussion of the subject (ibid.: 93). Some (ibid.) think that critical thinking on the whole does not exist. It is, rather, simply good thinking in the context of a particular subject or discipline. Hare denies this view and maintains that critical thinking in general does exist since our general knowledge enables us to comprehend a discussion and allow us to see clearly the misleading elements of an argument. Furthermore, Hare writes:

One always needs to know enough to understand what is going on in a debate; very often, however, one's general knowledge will allow us to follow a discussion, and we can see at a certain point that something is going wrong. Not all principles of argument are subject-specific; useful distinctions can be learned in a context-free way, and drawn on in any context where they are relevant.

I support Hare's opinion that critical thinking in general does exist because the principles of argument can be applied anywhere in any context. For example, when voters listen to the candidates in a presidential debate, they must understand certain principles of argument so that they are able to decide which argument is coherent, logical and factual. These principles must be the same for every person.

Moreover, he argues that some oppose critical thinking because of its tendency to make people view things in a negative light rather than a positive light. As a result, they will argue with each other and will not cooperate and come to an agreement. Of course if one always sees the negative side of something it would be difficult for him or her to cooperate with others but at the same time, being blind to negative aspects will put a person in a dangerous situation since he or she is not prepared to face unforeseen situations.

However, Hare thinks that this opposition does not count against critical thinking as such, only against a certain approach to critical thinking which is hostile and aggressive; indeed, it may be entirely appropriate in many contexts to defer temporarily a critical assessment until one has established a relationship and an atmosphere which is supportive and cooperative (Hare, *ibid.*). I would agree with Hare's position on this. What is required if we want to adopt critical thinking as an educational goal is to be aware of the importance of having a sympathetic attitude. This means that we know that our purpose is to find the solution and not create a new problem. When we purpose arguments, we do it with as spec attitude to hearing others opinions and getting something good from them in order to find a addition.

In addition, Bailin and Siegel explain that some disapprove of critical thinking because it rejects emotions (Bailin and Siegel, *ibid.*: 190). However, they argue that many critical thinking theorists support the role of the emotions in making us sensitive to others' feeling. So, even though one thinks critically, he or she must still be considerate to others' feelings.

Furthermore, they write that some people reject critical thinking because it assumes the chance of objectivity and thus does not identify the fact that the individual is located in his or her own situation, one that is different from that of another person. I would argue we can will and/or objectivity without disregard the individual condition. It is true that every person is unique as an individual and, therefore, it is difficult to regard their situation as the same as that of another. However, objectivity also has its own function in uniting many opinions.

To conclude, despite all the critiques, critical thinking is a essential skill for students. They will face rapid change and an uncertain world and as such they must be flexible and creative in their thought. They must have the ability to apply knowledge in practical life and not let that knowledge become inert. It is common that people know a fact about a certain fact but fact they cannot use it appropriately in their daily life.

Furthermore, education aimed at critical thinking will prepare the students in that they will have an open-minded attitude and the humility to listen to others' opinions and adjust it to their own situation; here on the other hand, that kind of education will also prevent these from being attached to preexisting invalid arguments. They will have each an alert that it will make them aware of biased and invalid claims.

CHAPTER 3
AUTONOMY AND CRITICAL THINKING
AS ALTERNATIVE AIMS OF EDUCATION IN INDONESIA

3.1 The Results of Critical Thinking Tests on Students in Palangka Raya, Central Kalimantan, Indonesia

A survey (in the form of a questionnaire) was conducted in Palangka Raya, Central Kalimantan, Indonesia on April 2011 to measure students' ability to think critically. The total sample consists of 176 students from four major universities: Palangka Raya University (UNPAR), Muhammadiyah University, The Palangka Raya State Christian College (STAKN Palangka Raya College) and Christian University of Palangka Raya (UNKRIP). The participants were presented with 30 multiple choice questions which were adapted from Starkey's book *Critical Thinking Skills Success* and the Graduate Management Admission Test (GMAT) Sample Critical Question. These questions are sufficient enough to measure several skills in critical thinking including (1) the ability to examine and evaluate situations that require careful assessment (measured by 4 questions), (2) the ability to decide whether the claim is valid or biased (measured by 22 questions), (3) the ability to judge opinions independently without attachment to previous discussions or to certain public opinions (measured by two questions) And (4) the ability to view issues from different point of view and provide a new framework in which differs from the current framework (measured by 2 questions).

In order to make the questions more easily comprehensible for the students, I made some adjustments to the questions. I changed the contexts and wording of some questions and adjusted them to the Indonesian context, but the central point of the questions remained the same. For example, take question 4 part b: 'The very best mothers serve Loughorn Chili-in-a-can'. I changed this to: 'The very best mothers serve ABC ketchup' because students in Indonesia are not familiar with Loughorn Chili-in-a-can (For details, see appendix).

The chronology of data elicitation is as follows. I chose respondents from four universities: 18 students from one class in the faculty of teaching and education science at UNPAR, 62 students from two classes in the faculty of teaching and education science at Muhammadiyah University, 51 students from three classes at STAKN Palangka Raya College, and 45 students from three classes at UNKRIP. The data was taken from each class by asking the students to fill out the questionnaires.

Table 3.1

Students with Good Critical Thinking					Students with Less Critical Thinking				
Percentage of the Correct Answer	76	73	70	67	60	56	53	50	20 - 46
Student	1	1	2	6	13	17	16	17	91

I opted for 60 % as the line between good and less critical thinking skills because it is a well known practice in Indonesia.

In the survey, only 35 students could answer 60 % or more of the questions correctly. This means that if we agree that the standard for good critical thinking is to be able to answer 60 % or above, then only 20 % students demonstrate this ability. From this 20 %, 13 students could answer 60 % of the question properly, 12 students got 63 % correct and six students got 67 % correct, two students got 70 % correct, one student was able to answer 73 % of the questionnaire correctly and, finally, one student got the highest score of 76 % correct.

The rest of the sample (141 students) had a score below 60 % which means that they do not have a high ability of critical thinking. From this group, 17 students got 56 % correct, 16 students could answer 53 % of the questions correctly, 17 students could answer 50 % of the questions correctly and the rest (91 students) got a score in the range of 20 % to 46 %. For this last category (20 % to 46 %), I combine 20% up to 46 % because participants in this range got score below 60 % which is the lowest scoring group of the survey. The other groups, by contrast, I do not combine because they were the exact percentages of the results.

Table 3.2 Correct answer for skill I

Sample: 176 people

Skill One				
Question Number	1	11	16	26
Number of people answered correctly	173	121	106	68

Table 3.3 Correct answer for skill 2

Sample: 176 people

		Skill Two																					
Question Number		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Number of people answered correctly		36	93	51	127	95	36	38	46	36	46	158	183	95	115	81	38	83	54	95	27	95	69

Table 3.4 Correct answer for skill 3

Sample: 176 people

Skill	Three	
Question Number	4	17
Number of people answered correctly	62	111

Table 3.5 Correct answer for skill 4

Sample: 176 people

Skill	Four	
Question Number	2	14
Number of people answered correctly	96	71

From tables 3.3 - 3.6, we can infer that question number 1 for skill 1 gets the highest number of correct answers with 173 respondents getting it right, while question number 20 for skill 2 gets the smallest number of correct answers from 27 respondents.

The respondents have been in education since elementary school but still they seem unable to apply their knowledge to solve the problems which were set for them in the questionnaire.

I want to make clear that this survey requires many improvements, and for this reason I would really encourage other researchers to collect similar data in order to determine students' abilities to think critically whether in Palangka Raya or in other place in Indonesia. To do so, I have some suggestion for others who would carry out similar research.

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Firstly, it is important to use a proper definition of critical thinking because we can only measure based on the given definition. If we do not use a proper definition then we cannot measure the abilities correctly. In this research, the definition that I used for critical thinking is that of William Hare. He writes that someone who thinks critically should be able to identify and examine assumptions which lie hidden. Critical thinking demands some specific attitudes on the part of the students: (1) ability to examine and evaluate situations this need careful assessment, (2) the ability to decide whether the claim is valid or biased (some arguments may not be relevant but uncritical persons may simply accept them without further consideration), (3) the ability to judge opinions independently without attachment to previous discussions or certain public opinions. William Hare argues that it is crucial to resist the imposition of ideas and to avoid being convinced of ideas which are taken granted in the prevailing inintellectual and social climate (1990: 90). This skill is important because previous discussions do not necessarily contain true or valid arguments and so we must be careful then we do not base our beliefs on invalid propositions. Finally, (4) the ability to view issues from different points of view and provide a new framework which is contrary to differs from the correct framework. Hence, someone who thinks critically is able to apply his or her knowledge in real life and adapt him or herself to every situation.

In order to conclude on the subject of the proper definition of critical thinking, I would suggest that there must be cooperation between many fields of study. As a consideration, I propose the definition of critical thinking that I have explained above in chapter two. Various experts from different fields such as education, linguistics, cultural studies, psychology and social studies should discuss and reach an agreement about the definition of critical thinking specific to Indonesia since Indonesia has its own context, background and culture which are certainly unique and differ from those of other countries. Besides, by sitting together, they may answer the question: What do you want to measure in a critical thinking test and what is the best tool to use? By involving a number of experts many points of view will come up and the research will benefit from an interdisciplinary approach.

Secondly, it is important to have a proper operationalization. When researchers have proper operationalization, they should have the right translation from definition to question. In other words, the questions must represent the definition properly. The researchers should standardize the question and then must take care that the question is capable of measuring the ability of students to think critically. In this sense, they used to

be aware of the fact that the test should be able to measure the critical thinking ability in real life. The researchers should also justify using the critical thinking test: they are measuring the competence of students to think critically. The most important thing that should be realized is a method of jumping from testing critical thinking to measuring students' competence.

Thirdly, the researchers must have a methodologically critical attitude. They must ensure that the test functions properly. This means that the instrument is specific enough for the task of measuring. If someone gets a low score this means that he or she has less ability to think critically. On the other hand, if someone passes the test this means that he or she is able to think critically in real life. The researchers also need to take care that the number of questions is reliable for measuring the critical thinking ability. Furthermore, we need to have certainty that the questions in the critical thinking test can be asked to a large number of students from many universities and that it will not generate different effects depending on them. In other words, the results are always the same in different settings and larger populations. In this survey, I use an adapted version of the test from Starkey and the GMAT Sample Critical Question. Of the 30 questions, there are just over 20 that test on skill two because skill two is the most complex one which needs to be represented. To differentiate between valid and biased arguments is crucial in developing critical thinking abilities because we cannot take for granted that others hold unbiased opinions. We must evaluate every opinion we come into contact with. Biased opinions still increase the risk of making a bad decision and prevent us from evaluating objectively. However, for an improvement, it would be desirable that future researchers add score questions on skills one, three and four.

3.2 **Autonomy and Critical Thinking as Alternative Aims of Education in Indonesia**

The data presented above shows the students' ability to think critically. The survey was conducted at four universities in Palangka Raya, Central Kalimantan. The results show that most of students in those universities in Palangka Raya are not capable of thinking critically to a high standard. We do not, of course, know whether we can generalize data for all students in Indonesia based on this but all levels of educational institution in Indonesia are based on the same constitution (see below). This might give some reasons to believe that the university in Jakarta, for instance, or other universities in Indonesia will provide the same results as the universities in Palangka Raya. If it is indeed the case that the majority of Indonesian students are unable to think critically,

then we must devote our attention to this an educational priority in order to develop the students' capabilities.

It is perhaps helpful to provide a brief overview of the purpose of Indonesian national education. Indonesian national education is based on Pancasila and the Constitution of the Republic of Indonesia from 1945, which is rooted in the religious values and national culture of Indonesia and responsive to the demands of the changing times. To realize these goals are supposed to be the responsibility of the whole society.

The purpose of national education as set out in the Constitution 20/2003 on national education is to develop skills and characters to reinforce the national dignity and civilization (2003: 3). It also functions to develop the learners' potential in order to become citizens who have faith and piety to the Almighty God as well as citizens who are noble, healthy, knowledgeable, capable, creative, independent, democratic and accountable.

The national education system has a vision of education as a strong and authoritative social institution aimed at empowering all Indonesian citizens in order to become capable and proactive to the demands of changing aimed (2003: 24).

With this vision of education, the national education system has the following stated missions: firstly, to extend the equal opportunity to attain quality education for all Indonesian people; secondly, to assist and facilitate the potential development of the nation as a whole from the cradle to the grave in order to realize a learned society; thirdly, to improve the readiness and the quality of the educational process to optimize the formation of a moral personality; fourthly, to enhance professionalism and accountability of educational institutions as a civilizing center of science, skill, experience, attitude and value base on national and global standards; and lastly, to empower community participation in providing an education system based on the principle of autonomy in the context of the Unitary Republic of Indonesia (ibid.).

In the first chapter, I emphasized the significance of formulating the aims of education explicitly because it will help to focus people on the important aspects of what is to be done in education. Additionally, it will limit the potential of extraneous ends to claim themselves as ultimate ends that have, in fact, nothing at all to do with education. In this sense Indonesia has already articulated the aims of its educational system in the Constitution 20/2003.

Moreover, in the first and second chapters, I argued for the importance of autonomy and critical thinking as aims of education. I explained that to become autonomous is one of the key ingredients required in order to have comprehension of the reason why of matters, since if one does not care about choosing his or her direction from among many different options he or she will not have enough curiosity to acquire an understanding of the heart of the matter. By being autonomous one will have the independence and confidence to think and do something for themselves; he or she must also be informed about the range of choices to be or she can choose based on rational consideration. Therefore, he or she needs to be able to think critically. Autonomy and critical thinking are thus closely related. To become autonomous one needs to learn how to think critically and vice versa the critical thinker must be autonomous.

The Constitution 20/2003 mentions that the national education system has the five goals and four values above. I believe that all of these missions demand autonomy and critical thinking as their main foundations in order to be accomplished. For example, in order to facilitate the potential development of the nation as a whole, every citizen has to become autonomous in so far as they have the independence and maturity required to determine their decisions based on rational judgment. In addition, if one wants to reach an optimal level in his or her personal personality, he or she must have the ability to operate with autonomy and critical thinking because someone who always depends on others in determining his or her decisions cannot have the ability to control his or her behavior because it is not endorsed from the inside. In other words, his or her values are imposed from outside and do not come from his or her own understanding of the matters at hand. Furthermore, personal autonomy and critical thinking will enhance professionalism and accountability of educational institutions as a civilizing center of science, skill, experience, attitude and value based on national and global standards. Lastly, it mentions that the mission of education is to empower community participation in providing an education system based on the principle of autonomy in the context of the Unitary Republic of Indonesia. I would suggest citizens will participate optimally if they have the ability to conclude their own decisions among many choices based on rational judgment.

In so far as autonomy and critical thinking are not written explicitly in the Constitution 20/2003 it does not emphasize these values as the aims of education. Therefore, based on the arguments above I would propose that autonomy and critical thinking be adopted as among the aims of education in Indonesia.

3.3 Conclusion

In chapter one, I pointed out that having an aim is crucial to giving clear direction to people in life in general. An aim or goal will give someone energy and motivational power in his or her actions. Education similarly needs aims in its implementation since they will force educators to focus on the important goals of further education. Moreover, they will limit the ability of extraneous ends to claim themselves as ultimate ends that have, in fact, nothing at all to do with education. According to R.S. Peters, the extraneous ends of education are extrinsic to the true goals of the activity. He argues that the intrinsic aim is supposed to be the ultimate aim. In addition, Peters explains that the intrinsic aim of education is based on the explanation of what is to be educated to the student. An educated person is someone who understands the reason why of the matters. In other words, he or she is able to grasp the principles behind subject matters and has been made competent in relating such subject matters to real life. Furthermore, Peters says that someone can be called educated if education has succeeded in giving him or her the deep insight and sensitivity required to enable him or her to gradually develop new attitudes and intentions.

Moreover, I argue that autonomy is one of the most important aims of education that we need to consider. Autonomy refers to the activity whereby one gives oneself his or her own laws. An autonomous person is someone who has the freedom to choose and to conduct his or her own life without interference from others.

However, there are some critiques of autonomy as an educational aim that need to be taken into account. The first arises from the fear that the notion of autonomy will potentially lead one to an extreme form of subjectivism whereby choices are based on the desires of the moment rather than on considered judgment. To avoid subjectivism, my argument goes to the view that one should base his or her autonomy on rational reflection. Through rational reflection, the principles of argumentation, which are objective in nature and valid anywhere at any time, are revealed. Education plays an important role here in establishing one's rational consideration.

The second critique comes from Michel Foucault. For Foucault, as pointed out by Marshall, the quest for personal autonomy is useless since it masks the fact that any such persons have been formed by political acts. Foucault's critique provides a good lesson that one must be aware and not allow autonomy to fall into a new form of social control.

socialization and indoctrination, her autonomy is nonetheless a good concept as an aim of education.

Because autonomy and critical thinking are closely connected and supported one another, in Chapter Two I proposed critical thinking as a complimentary site of education. Siegel characterizes the critical thinker as one who is appropriately moved by reasons and has a mastery of epistemic criteria such that reasons must meet a certain standard in order to be judged as adequate; that is, reasons that warrant beliefs, claims and actions.

There are several reasons why critical thinking appears as a fundamental educational standard. Firstly, much-publicized reports show that mindless rote learning still finds a place in numerous classrooms, whereby students are incapable of practicing their knowledge of problem solving and are not appreciated and treated as persons with intellectual independence. Secondly, the commonly held belief that students must have flexibility, creativity and autonomy which they can obtain through critical thinking is preparation for an uncertain future in the world. Thirdly, critical thinking has always played an essential role in the rational tradition of educational activities and of mathematics, science, literature, art, history, etc. Fourthly, it will provide students with self-sufficiency and prepare them adequately for adulthood. Lastly, critical thinking should be promoted in so far as we regard democracy as a valuable system because in democratic life, the citizen must be capable of critical analysis and good reasoning concerning political issues and public policy.

However, there are some critiques or doubts concerning critical thinking as an aim of education. The first critique is that critical thinking on the whole does not exist. I would argue to the contrary that critical thinking does exist because the principles of argument can be applied anywhere in any context. Moreover, some oppose critical thinking because of its tendency to make people see things in a negative light rather than a positive one. I would agree that if one always sees the negative side of things it would be difficult for him or her to cooperate with others. But in contrast, being blind to the negative aspects of phenomena will put one in a dangerous position since he or she is not prepared to face unforeseen situations.

In addition, some disapprove of critical thinking because it rejects emotions. My reply is to argue that even when one thinks critically one does not refrain from

considering the feelings of others. Furthermore, some people reject critical thinking because it assumes the possibility of objectivity and thus does not identify the fact that every individual has his or her own situation that is different from that of any other person. In my opinion, we can still be objective without disregarding individual conditions. It is true that every person is unique as an individual and that, therefore, it is difficult to regard their situation as the same as that of another. However, objectivity also has its own function in uniting many opinions.

In Chapter Three, I presented the results of critical thinking tests conducted on students in Palangka Raya, Central Kalimantan, Indonesia. In the test, there were given 30 multiple choice questions. From 176 respondents, only 35 students could answer 60 % or more of the questions correctly. A 60 % is determined as the threshold in distinguishing between a good level of critical thinking and lower level critical thinking, only 19 % of students who took the test can be said to have a good level of critical thinking.

I must admit that we cannot allow whether these results can be generalized for all students in Indonesia but there may be a reason for thinking this given that the whole educational system of Indonesia is based on the Constitution 20/2003. If these results hold for the whole of Indonesia, then we must give priority to developing students' capabilities to think critically.

As a result of these findings, I would propose some allvices on improving the current situation. Firstly, I propose critical thinking and autonomy as primary educational aims in Indonesia that should be explicitly stated in the constitution of Indonesian national education. Secondly, I would encourage more statistical research in order to determine whether it is true that the current constitution plays role is producing uncritical students. Subsequent researchers must also investigate whether every school and university in Indonesia will gain the same results as the result in Palangka Raya in tests of critical thinking. Lastly, I recommend that a pilot project be conducted at some universities in Palangka Raya, for instance, to make critical thinking and autonomy the aims of education in these universities. Based on this and the other findings and conclusions discussed in this study, we will be able to see the effects of such a project on students' autonomy and critical thinking in five or ten years.

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Evi Mariani, (13/07/2022 14:27)

6 Critical thinking is a widely accepted educational goal. Its definition is contested, but the competing definitions can be understood as differing conceptions of the same basic concept: careful thinking directed to a goal. Conceptions differ with respect to the scope of such thinking, the type of goal, the criteria and norms for thinking carefully, and the thinking components on which they focus. Its adoption as an educational goal has been recommended on the basis of respect for students' autonomy and preparing students for success in life and for democratic citizenship. "Critical thinkers" have the dispositions and abilities that lead them to think critically when appropriate. The abilities can be identified directly; the dispositions indirectly, by considering what factors contribute to or impede exercise of the abilities. Standardized tests have been developed to assess the degree to which a person possesses such dispositions and abilities. Educational intervention has been shown experimentally to improve them, particularly when it includes dialogue, anchored instruction, and mentoring. Controversies have arisen over the generalizability of critical thinking across domains, over alleged bias in critical thinking theories and instruction, and over the relationship of critical thinking to other types of thinking.

9 Berpikir kritis adalah tujuan pendidikan yang diterima secara luas. Definisinya diperdebatkan, tetapi definisi yang bersaing dapat dipahami sebagai konsepsi yang berbeda dari konsep dasar yang sama: pemikiran yang cermat diarahkan pada suatu tujuan. Konsepsi berbeda selubung dengan ruang lingkup pemikiran tersebut, jenis tujuan, kriteria dan norma untuk berpikir dengan hati-hati, dan komponen pemikiran yang menjadi fokusnya. Penerapannya sebagai tujuan pendidikan telah direkomendasikan bias dasar penghormatan terhadap otonomi siswa dan mempersiapkan siswa untuk sukses dalam hidup dan untuk kewarganegaraan yang demokratis. "Pemikir kritis" memiliki disposisi dan kemampuan yang mengarahkan mereka untuk berpikir kritis pada saat yang tepat. Kemampuan dapat diidentifikasi secara langsung; disposisi secara tidak langsung, dengan mempertimbangkan faktor-faktor apa yang berkontribusi atau menghambat pelaksanaan kemampuan. Tes standar telah dikembangkan untuk mendel sejauh mana seseorang memiliki disposisi dan kemampuan tersebut. Intervensi pendidikan telah ditunjukkan secara eksperimental untuk memperbaikinya, terutama ketika itu mencakup dialog, instruksi berlabuh, dan pendampingan. Kontroversi telah muncul atas generalisasi pemikiran kritis di seluruh

domain, atas dugaan bias dalam teori dan insuksi berpikir kritis, dan atas hubungan pemikiran kritis dengan jenis pemikiran lainnya.

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23

Critical Thinking (Stanford Encyclopedia of Philosophy/Fall 2020 Edition)

<https://plato.stanford.edu/archives/fall2020/entries/critical-thinking/>

**Critical Thinking Test
(Original Version)**

1. You conducted a successful job search, and now have three offers from which to choose. What things can you do to most thoroughly investigate your potential employers?
 - a. check out their websites
 - b. watch the news to see if the companies are mentioned
 - c. research their financial situations
 - d. speak with people who work for them already

2. Every Monday, your teacher gives you a quiz on the reading he assigned for the weekend. Since he typically assigns at least 50 pages of textbook reading, the quizzes are difficult and you have not gotten good grades on them so far. Which answer represents the best idea for troubleshooting this problem and improving your grades?
 - a. ask for the assignment earlier in the week
 - b. schedule in more time on Saturday and Sunday for reading and studying
 - c. get up an hour earlier on Monday morning to go over the reading
 - d. get a good night's sleep and eat a good breakfast before the quiz

3. What is the best conclusion for the argument that begins, "The other eight people in my class . . ."?
 - a. like meatballs, so I should too.
 - b. live in apartments on the south side of town, so I should live there too.
 - c. who studied Jorge's notes got D's, so I will get a D too.
 - d. who met the new principal like him, so I should too.

4. Which one of the following is NOT an example of a persuasion technique?
 - a. Tigras jeans are available at your local Mega Mart store.
 - b. The very best mothers serve Laughem Chili-in-a-can.
 - c. "Vote for me, and I promise our schools will improve. My opponent just wants to cut the school budget!"
 - d. Our tires not only look better, but they ride better, too.

5. Which is a sound argument?
 - a. I had a dream that I got a D on my biology test, and it came true. If I want to do better next time, I need to have a more positive dream.
 - b. Beth wanted to become a better driver, so she took a driving class and studied the Motor Vehicles manual. Her driving really improved.
 - c. After a strong wind storm last October, all of the leaves were off the trees. That is when I learned that wind is what makes the leaves fall.
 - d. When Max realized he was catching a cold, he started taking Cold-Go-Away. In four days, he felt much better, thanks to the Cold-Go-Away.

6. You are trying to decide what car to buy. You make a chart that compares a two-seater sports car, a two-door sedan, and a mini-SUV in three categories. What would not be a sensible choice for a category?
 - a. price
 - b. gas mileage
 - c. tire pressure

d. storage capacity

7. Which answer best represents a situation that has been decided by emotion alone?
- You hate the winter, so even though you can't afford it, you take a vacation to the Bahamas.
 - The school shuts down after a bomb threat.
 - Your company's third-quarter earnings were much higher than predicted.
 - You need a new mixer, so you watch the ads in your newspaper, and buy one when it goes on sale.
8. All German philosophers, except for Marx, are idealists. From which of the following can the statement above most properly be deduced?
- Except for Marx, if someone is an idealist philosopher, then he or she is German.
 - Marx is the only non-German philosopher who is an idealist.
 - If a German is an idealist, then he or she is a philosopher, as long as he or she is not Marx.
 - Marx is not an idealist German philosopher.
9. You read a story in the newspaper about salary negotiations involving public transportation workers. The workers are threatening to go on strike tomorrow if their demands for higher wages and better benefits are not met. What represents an inference made from this scenario?
- Health insurance premiums are very expensive.
 - The cost of gas will make ticket prices increase in the next few weeks.
 - People who ride the bus should look for possible alternative transportation.
 - Employers never like to meet salary demands.
10. What is wrong with this argument? "You think we need a new regulation to control air pollution? I think we have already got too many regulations. Politicians just love to pass new ones, and control us even more than they already do. It is suffocating. We definitely do not need any new regulations."
- The person speaking doesn't care about the environment.
 - The person speaking has changed the subject.
 - The person speaking is running for political office.
 - The person speaking does not understand pollution.
11. What should you NOT rely on when making a judgment call?
- intuition
 - common sense
 - gossip
 - past experience
12. Which is NOT a valid argument?
- There are six cans of tomatoes in the pantry, and another fourteen in the basement. There are no other cans of tomatoes in his house. Therefore, he has twenty cans of tomatoes in his house.
 - Everyone who was northbound on the interstate yesterday was late to work. Faith was on the interstate. Faith was late to work.
 - Huang lives in either Kansas City, Kansas, or Kansas City, Missouri. If he lives in Kansas then he is an American.

- d. No one who eats in the cafeteria likes the pizza. My boss eats in the cafeteria. Therefore, she does not like the pizza.
13. What statement represents a judgment instead of a fact?
- My presentation was excellent. I am sure my boss will promote me now.
 - My presentation was excellent. The clients all told me they liked it.
 - My presentation was excellent. It won an award from management.
 - My presentation was excellent. It was cited as such on my peer evaluation.
14. Your dream is to spend a summer in **Indonesia**. After some research, you conclude that you will need \$6,000 for the trip. Which answer represents the best choice for goal setting to make your dream a reality?
- Cut \$200 per month of discretionary spending, and save the money.
 - Ask family members and friends for donations.
 - Sell your car and use the money to fund the trip.
 - Look into a more reasonably priced destination for your summer trip.
15. What is wrong with the following argument? **America**—love it, or leave it!
- There is nothing wrong with the argument.
 - It implies that if you leave the country on vacation, you do not love it.
 - It does not tell you how to love it.
 - It presents only two options, when in fact there are many more.
16. Which of these situations does NOT require problem solving?
- After you get your new computer home, you find that there is no mouse in the box.
 - When you get your pictures back from being developed, you realize that they are someone else's.
 - Everyone on your team wants to celebrate at the Burger Palace, but you just ate there last night.
 - Your boss asks you to finish a report for tomorrow morning, but it is your son's birthday and you promised you would take him to the ball game tonight.
17. Which phrase is an example of hyperbole?
- In a perfect world, there would be no war.
 - His booming voice broke my ear.
 - You are not the world's best cook.
 - He drives almost as fast as a Formula One driver.
18. What is the most likely cause of the following: "Our hockey team has been undefeated this season."
- The other teams do not have new uniforms.
 - We have a new coach who works the team hard.
 - Some of our team members went to hockey camp over the summer.
 - I wore my lucky sweater to every home game.
19. What is wrong with the "logic" of the following statement? "How can you believe his testimony? He is a convicted felon!"
- The fact that the person testifying was convicted of a crime does not mean he is lying.
 - A convicted felon cannot testify in a court of law.
 - The person speaking has a bias against criminals.
 - The person speaking obviously did not attend law school.
20. Evidence shows that the people who live in the Antarctic score higher on happiness surveys than those who live in Florida. Which is the best conclusion that can be drawn from this data?
- Floridians would be happier if they moved to the Antarctic.

- b. People in colder climates are happier than those in warmer climates.
- c. There are only happy people in the Antarctic.
- d. Those in the Antarctic who scored high on a happiness survey probably like snow.

21. Which of the following is a sound argument?

- a. I got an A on the test. I was really tired last night, though, and I barely studied. To keep getting A's, I need to stop studying so hard.
- b. Your car is not running well. You just tried that new mechanic when you needed an oil change. I bet he is the reason you are having car trouble.
- c. I have not vacuumed in weeks. There is dust and dirt all over my floors, and my allergies are acting up. If I want a cleaner house, I need to vacuum more frequently.
- d. The Boston Red Sox team have not won a world series during this time. They won the America League playoffs in 2003. The Red Sox will lose the series.

Read the paragraph and answer the following two questions.

I always knew I wanted to be a marine biologist. When I was six, my parents took me to an aquarium, and I was hooked. But it was in college, when I got to work on an ocean research cruise, that I decided to specialize in oceanography. The trip was sponsored by the Plankton Investigative Service, and our goal was to collect as many different types of the microscopic plants and animals as we could, in order to see what, if any, impact the increased number of fishermen had on the marine ecosystem. Our group was divided into two teams, each responsible for gathering a different type of plankton. Working with the phytoplankton, especially the blue-green algae, was fascinating. We measured the chlorophyll in the water to determine where, and in what quantity the phytoplankton were. This worked well because the water was so clear, free of sediment and contaminants.

22. What is phytoplankton?

- a. another name for chlorophyll
- b. a microscopic plant
- c. a microscopic animal
- d. a type of fish

23. The author says her group was investigating whether more fishermen in the area of study had

- a. a positive impact on the local economy.
- b. depleted the supply of fish.
- c. made more work for marine biologists.
- d. a negative impact on the health of the surrounding waters.

24. You want to sell your three-year-old car and buy a new one. Which website would probably give you the best information on how to sell a used car?

- a. www.cars.com: get the latest pricing and reviews for new and used cars; tips on detailing for a higher price
- b. www.betterbusinessbureau.org: provides free consumer and business education; consult us before you get started in your new business!
- c. www.newwheels.com: research every make and model of Detroit's latest offerings
- d. www.carbuyingtips.com: everything you need to know before you shop for your new car

25. Which explanation is weakest?

- a. Gas prices are so high that many people are not going on long trips anymore.
- b. I can't wear my new shirt tomorrow because it is in the wash.

- c. Jane's homework was late because it was not turned in on time.
- d. We do not have new textbooks this year because the school budget was cut.

26. Which of these problems is most severe?
- a. Your professor is sick and misses class on the morning you are supposed to take a big exam.
 - b. You lose track of your schedule and forget to study for a big exam.
 - c. You can't find one of the books you need to study for a big exam.
 - d. The big exam is harder than you thought it would be and includes a section you did not study.
27. What is the most important reason for evaluating information found on the Internet?
- a. Authors who publish on the Internet are typically less skilled than those who publish in print.
 - b. Web writers are usually biased.
 - c. Anyone can publish on the Internet; there is no guarantee that what you are reading is truthful or objective.
 - d. Information found in print is almost always more accurate than that found on the Internet.
28. What is wrong with the following argument? "We should not change our grading system to numbers instead of letters. The next thing you know, they will take our names away and refer to us by numbers, too!"
- a. The conclusion is the extreme.
 - b. There is nothing wrong with the argument.
 - c. Students should not have a say in the type of grading system for their schools.
 - d. It does not explain why they want to get rid of letter grades.

Questions 29-30 are based on the following passage.

If highways were restricted to cars and only those truck with capacity of less than 8 tons, most the truck traffic would be forced to run outside highway. Such a reduction in the amount of truck traffic would reduce the risk of collision in highway.

29. The conclusion drawn in the first sentence depends on which of the following assumptions?
- a. The roads outside highway would be as convenient as highway for most drivers of truck.
 - b. Most roads outside highways are not ready to handle truck traffic.
 - c. Most trucks that are currently running in highway have a capacity of more than 8 tons.
 - d. Cars are at greater risk of becoming involved in collisions than are trucks.
30. Which of the following, if true, would most strengthen the conclusion drawn in the second sentence?
- a. Cars with a capacity of more than 8 tons are already excluded outside highways.
 - b. Many drivers of trucks would rather buy truck with a capacity of less than 8 tons than be excluded from highways.
 - c. The number of collisions that occur near highways has decreased in recent years.
 - d. Trucks that have a capacity of more than 8 tons cause a disproportionately large number of collisions in highways.

**Critical Thinking Test
(Modified Version)**

1. You conducted a successful job search, and now have three offers from which to choose. What things can you do to most thoroughly investigate your potential employers?
- check out their websites
 - watch the news to see if the companies are mentioned
 - research their financial situations
 - talk with people who work for them already
2. Every Monday, your teacher gives you a quiz on the reading he assigned for the weekend. Since he typically assigns at least 50 pages of textbook reading, the quizzes are difficult and you have not gotten good grades on them so far. Which answer represents the best idea for troubleshooting this problem and improving your grades?
- ask for the assignment earlier in the week
 - schedule in more time on Saturday and Sunday for reading and studying
 - get up an hour earlier on Monday morning to go over the reading
 - get a good night's sleep and eat a good breakfast before the quiz
3. What is the best conclusion for the argument that begins, "The other eight people in my class ...?"
- like meatballs, so I should too.
 - live in apartments on the south side of town, so I should live there too.
 - who studied Jorge's notes got D's, so I will get a D too.
 - who met the new principal like him, so I should too.
4. Which one of the following is NOT an example of a persuasion technique?
- Let jeans be available at your local Mega Mart store.
 - The very best mothers cook with ABC ketchup.
 - "Vote for me, and I promise our schools will improve. My opponent just wants to cut the school budget"
 - Our tires not only ride better, not they ride better, too.
5. Which is a sound argument?
- I had a dream that I got a D on my biology test, and it came true. If I want to do better next time, I need to have a more positive dream.
 - Beth wanted to become a better driver, so she took a driving class and studied the Motor Vehicles manual. Her driving really improved.
 - After a strong wind storm last October, all of the leaves were off the trees. That is when I learned that wind is what makes the leaves fall.
 - When Max realized he was catching a cold, he started taking Tehuk Angin herb. In four days, he felt much better, thanks to the Tehuk Angin.
6. You are trying to decide what car to buy. You make a chart that compares a two-seater sports car, a two-door sedan, and a mini-SUV in three categories. What would not be a suitable choice for a category?
- price

- b. gas mileage
 - c. tire pressure
 - d. storage capacity
7. Which answer best represents a situation that has been decided by emotion alone?
- a. You hate the winter, so even though you can't afford it, you take a vacation to the Bahamas.
 - b. The school shuts down after a bomb threat.
 - c. Your company's third-quarter earnings were much higher than predicted.
 - d. You need a new mixer, so you watch the ads in your newspaper, and buy one when it goes on sale.
8. All German philosophers, except for Marx, are idealists. From which of the following can the statement above most properly be equated?
- a. Except for Marx, if someone is an idealist philosopher, then he or she is German.
 - b. Marx is the only non-German philosopher who is an idealist.
 - c. If a German is an idealist, then he or she is a philosopher, as long as he or she is not Marx.
 - d. Marx is not an idealist German philosopher.
9. You read a story in the newspaper about salary negotiations involving public transportation workers. The workers are threatening to go on strike tomorrow if their demands for higher wages and better benefits are not met. What represents an inference made from this scenario?
- a. Health insurance premiums are very expensive.
 - b. The cost of gas will make ticket prices increase in the next few weeks.
 - c. People who ride the bus should look for possible alternative transportation.
 - d. Employers never like to meet salary demands.
10. What is wrong with this argument? "You think we need a new regulation to control air pollution? I think we have already got too many regulations. Politicians just love to pass new ones, and control us even more than they already do. It is suffocating. We definitely do not need any new regulations."
- a. The person speaking doesn't care about the environment.
 - b. The person speaking has changed the subject.
 - c. The person speaking is running for political office.
 - d. The person speaking does not understand pollution.
11. What should you NOT rely on when making a judgment call?
- a. intuition
 - b. common sense
 - c. gossip
 - d. past experience
12. Which is NOT a valid argument?
- a. There are six cans of tomatoes in the pantry, and another fourteen in the basement. There are no other cans of tomatoes in his house. Therefore, he has twenty cans of tomatoes in his house.
 - b. Everyone who was northbound on the interstate yesterday was late to work. Faith was on the interstate. Faith was late to work.
 - c. Huang lives in either Kansas City, Kansas, or Kansas City, Missouri. If he lives in Kansas then he is an American.

- d. No one who eats in the cafeteria likes the pizza. My boss eats in the cafeteria. Therefore, the boss does not like the pizza.
13. What statement represents a judgment instead of a fact?
- My presentation was excellent. I am sure my boss will promote me now.
 - My presentation was excellent. The clients all told me they liked it.
 - My presentation was excellent. It won an award from management.
 - My presentation was excellent. It was cited as such on my peer evaluation.
14. Your dream is to spend a summer in Europe. After some research, you conclude that you will need \$6,000 for the trip. Which answer represents the best choice for goal setting to make your dream a reality?
- Cut \$200 per month of discretionary spending, and save the money.
 - Ask family members and friends for donations.
 - Sell your car and use the money to fund the trip.
 - Look into a more reasonably priced destination for your summer trip.
15. What is wrong with the following argument? My country—love it, or leave it!
- There is nothing wrong with the argument.
 - It implies that if you leave the country on vacation, you do not love it.
 - It does not tell you how to love it.
 - It presents only two options, when in fact there are many more.
16. Which of these situations does NOT require problem solving?
- After you get your new computer home, you find that there is no mouse in the box.
 - When you get your pictures back from being developed, you realize that they are someone else's.
 - Everyone on your team wants to celebrate at the Burger Palace, but you last ate there last night.
 - Your boss asks you to finish a report for tomorrow morning, but it is your son's birthday and you promised you would take him to the ball game tonight.
17. Which phrase is an example of hyperbole?
- In a perfect world, there would be no war.
 - His booming voice broke my ear.
 - You are not the world's best cook.
 - He drives almost as fast as a Formula One driver.
18. What is the most likely cause of the following: "Our hockey team has been undefeated this season."
- The other teams do not have new uniforms.
 - We have a new coach who works the team hard.
 - Some of our team members went to hockey camp over the summer.
 - I wore my lucky sweater to every home game.
19. What is wrong with the "logic" of the following statement? "How can you believe his testimony? He is a convicted felon!"
- The fact that the person testifying was convicted of a crime does not mean he is lying.
 - A convicted felon cannot testify in a court of law.
 - The person speaking has a bias against criminals.
 - The person speaking obviously did not attend law school.
20. Evidence shows that the people who live in the Antarctic score higher on happiness surveys than those who live in Florida. Which is the best conclusion that can be drawn from this data?
- Floridians would be happier if they moved to the Antarctic.

- b. People in colder climates are happier than those in warmer climates.
- c. There are only happy people in the Antarctic.
- d. Those in the Antarctic who scored high on a happiness survey probably like snow.

21. Which of the following is a sound argument?

- a. I got an A on the test. I was really tired but didn't, though, and I barely studied. To keep getting A's, I need to stop studying so hard.
- b. Your car is not running well. You just tried the new mechanic when you needed an oil change. I bet he is the reason you are having car trouble.
- c. I have not vacuumed in weeks. There is dust and dirt all over my floors, and my allergies are acting up. If I want a cleaner house, I need to vacuum more frequently.
- d. The Garuda team have not won a world series during this time. They won the Southeast Asia League in 2003. The Garuda will lose the series.

Read the paragraph and answer the following two questions.

I always knew I wanted to be a marine biologist. When I was six, my parents took me to an aquarium, and I was hooked. But it was in college, when I got to work on an ocean research cruise, that I decided to specialize in oceanography. The trip was sponsored by the Plankton Investigative Service, and our goal was to collect as many different types of the microscopic plants and animals as we could, in order to see what, if any, impact the increased number of fishermen had on the marine ecosystem. Our group was divided into two teams, each responsible for gathering a different type of plankton. Working with the phytoplankton, especially the blue-green algae, was fascinating. We measured the chlorophyll in the water to determine where, and in what quantity the phytoplankton were. This worked well because the water was so clear, free of sediment and contaminants.

22. What is phytoplankton?

- a. another name for chlorophyll
- b. a microscopic plant
- c. a microscopic animal
- d. a type of fish

23. The author says her group was investigating whether more fishermen in the area of study had

- a. a positive impact on the local economy.
- b. depleted the supply of fish.
- c. made more work for marine biologists.
- d. a negative impact on the health of the surrounding waters.

24. You want to sell your three-year-old car and buy a new one. Which website would probably give you the best information on how to sell a used car?

- a. www.carsotrader.com: get the latest pricing and reviews for new and used cars; tips on detailing for a higher price
- b. www.betterbusinessbureau.org: provides free consumer and business education; consult as before you get started in your new business!
- c. www.newwheels.com: research every make and model of Detroit's latest offerings
- d. www.carbuyingtips.com: everything you need to know before you shop for your new car

25. Which explanation is weakest?

- a. Gas prices are so high that many people are not going on long trips anymore.
- b. I can't wear my new shirt tomorrow because it is in the wash.

- c. **Just's homework was late because it was not turned in do time.**
 - d. **We do not have new textbooks this year because the school budget was cut.**
26. Which of these problems is most severe?
- a. **Your professor is sick and misses class do the morning you are supposed to take a big exam.**
 - b. **You lose track of your schedule and forget to study for a big exam.**
 - c. **You can't find one of the books you need to study for a big exam.**
 - d. **The big exam is harder than you thought it would be and includes a section you did not study.**
27. What is the most important reason for evaluating information found on the Internet?
- a. **Authors who publish on the Internet are typically less skilled than those who publish in print.**
 - b. **Web writers are usually biased.**
 - c. **Anyone can publish on the Internet; there is no guarantee that what you are reading is truthful or objective.**
 - d. **Information found in print is almost always more accurate than that found on the Internet.**
28. What is wrong with the following argument? "We should not change our grading system to numbers instead of letters. The next thing you know, they will take our names away and refer to us by numbers, too!"
- a. **The conclusion is the extreme.**
 - b. **There is nothing wrong with the argument.**
 - c. **Students should not have a say in the type of grading system for their schools.**
 - d. **It does not explain why they want to get rid of letter grades.**

Questions 29-30 are based on the following passage.

If highways were restricted to cars and only those trucks with capacity of less than 8 tons, most the truck traffic would be forced to run outside highway. Such a reduction in the amount of truck traffic would reduce the risk of collision in highway.

29. The conclusion drawn in the first sentence depends on which of the following assumptions?
- a. **The roads outside highway would be as convenient as highway for most drivers of truck.**
 - b. **Most roads outside highways are not ready to handle truck traffic.**
 - c. **Most trucks that are currently running in highway have a capacity of more than 8 tons.**
 - d. **Cars are at greater risk of becoming involved in collisions than are trucks.**
30. Which of the following, if true, would most strengthen the conclusion drawn in the second sentence?
- a. **Cars with a capacity of more than 8 tons are already excluded outside highways.**
 - b. **Many drivers of trucks would rather buy truck with a capacity of less than 8 tons than be excluded from highways.**
 - c. **The number of collisions that occur near highways has decreased in recent years.**
 - d. **Trucks that have a capacity of more than 8 tons cause a disproportionately large number of collisions in highways.**

Explanation :

I changed the terms of names in question number 4, 5, 14, 15, 21 and 25 from the original questions because they were not familiar in Indonesia. I adjusted them into Indonesian context. (See the bold words).

Answers and Skills :

1. a, c, d (Skill 1)
2. b. (Skill 4)
3. c. (Skill 2)
4. a. (Skill 3)
5. b. (Skill 2)
6. e. (Skill 2)
7. a. (Skill 2)
8. d. (Skill 2)
9. e. (Skill 3)
10. b. (Skill 2)
11. e. (Skill 1)
12. e. (Skill 2)
13. a. (Skill 2)
14. a. (Skill 4)
15. d. (Skill 2)
16. e. (Skill 1)
17. b. (Skill 3)
18. b. (Skill 2)
19. a. (Skill 2)
20. d. (Skill 2)
21. c. (Skill 2)
22. b. (Skill 2)
25. d. (Skill 2)
24. a. (Skill 2)
23. c. (Skill 2)
26. b. (Skill 1)
27. c. (Skill 2)
28. a. (Skill 2)
29. c. (Skill 2)
30. d. (Skill 2)

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