

An Investigation into the Effect of Constructivist Learning Methods Used in Physical Science on Learners' Self-Esteem in Zambian Secondary Schools

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Abstract— The use of constructivist learning methods has been put forward in various countries around the world due to their potential effects on the normal development of learners' self-esteem. However, little has been explored on this matter in the Zambian context. To that effect, this study was aimed at establishing the extent to which the use of these methods could affect the learners' self-esteem. The methodology used to achieve that goal included the use of the quasi-experimental research design, involving 376 grade 10 pupils from five Lusaka province schools and 10 of their physical science teachers. The data was collected using Rosenberg's Self-Esteem Scale and a semi-structured interview guide. The qualitative data were analysed thematically, while the quantitative data were analysed using statistical tests. Finally, ethical issues such as informed consent with respondents, equal treatment, confidentiality measures, and others were taken care of throughout the research. This study proved the learners' self-esteem level in Zambian schools could be enhanced through the use of constructivist learning methods in teaching science. This hence confirmed the effect of the social learning environment, provided by the constructivist learning approach on the cognitive and affective components of learners' behaviour. Furthermore, the level of self-esteem was found to be independent of the learners' gender and age. Mostly, the high sense of belonging, intrinsic motivation and a strong level of confidence in themselves, created by constructivist methods have a role to play in learners' self-esteem.

Keywords— Constructivism, Self-esteem, Effects of constructivist methods, Learners' Self-esteem.

I. INTRODUCTION

The combination of all kinds of behaviours that humans display constitutes their personal identity, which is regarded as a cognitive variable of their self. However, it is not only cognition that matters to fully describe the human personality, there is also an affective aspect of the self, which is made of the individual self-esteem (Owens, Stryker & Goodman, 2001). This entails that any social behaviours, expressed by an individual are driven by two interdependent players, namely their personal identity, or their cognitive part as well as their self-esteem, which is their affective variable of the personality. With regard to the importance of self-esteem in determining human behaviour, this article was devoted to examining what it is and how it relates to interactive learning using constructivist learning methods.

A. Concept of self-esteem

Self-esteem can be described as the general self-assessment of an individual, leading to their judging themselves as good or bad (Woolfolk, 2016, Santrock, 2011). This aspect of one's personality is either judged to be high or low and may fluctuate during a lifetime oscillating from low to high or negative to positive self-perception or vice versa, depending on different life situation changes (Santrock, 2017, Schunk et al., 2014 in Woolfolk, 2016). This view of self-esteem is shared by Greene (2003) who explains self-esteem as our own design that we give ourselves resulting from our interaction with and consideration by the society we live in, and our families.

This means that most of the actions and decisions made by humans throughout their lives, somehow have sources in and are affected by their self-esteem. Being a radical part of human personality, it is very important to understand how self-esteem comes about and how it grows and develops, to the point of governing the whole person.

B. Development of self-esteem

The main sources of self-esteem development, whether it is negative or positive, high or low, are said to be the experiences in a person's life. These life experiences may be positive or negative. Positive life experiences result in positive feelings of self-worth and confidence to deal with life's challenges (Erikson, 1968). On the other hand, negative life experiences create negative feelings of self-worth. In line with this fact, Child (1986) maintains that parents play a major role in shaping the self-concept of their children as they are the main sources of positive or negative experiences a child will have in the early years of life. These experiences could be both in terms of inborn characteristics such as tendencies towards being reserved, tough-minded, and self-sufficient which make one interpret and react to situations in a certain way in terms of the impact of external events in the parenting style. To that effect, Erik Erikson's stages of personality development also suggest that human personality develops with the help of the interactions among internal psychological factors and external social factors (Mruk, 2013). Therefore, unconditional love and care given by parents, later on, give the actual shape to self-esteem as the child grows older.

In this regard, self-esteem emerges quite at the same time as identity does but it does not either develop by individual effort or without social help. Besides that, even the formed self-esteem may only be qualified to be 'realistic' if several cultural factors, such as pride and satisfaction of own achievement, come into play, but accompanied by 'social recognition'. This self-esteem, once kept up, in the social setup and through collective effort, with other members of society, will grow to become 'ego identity' (Erikson, 1968, p49). Self-esteem can also be developed through introjection as one takes on attributes of a strong other person who is able to cope with their threatening situation. A common pattern in such scenarios is where a child introjects aspects of parents into its own persona (Frosh, 2003).

Other players in self-esteem building, during childhood after family, according to Bernstein et al. (2008) are teachers in school, where the teacher plays a crucial role in sustaining normal self-esteem, by providing an environment in which learners can discover their competencies. Nonetheless, for this effect to materialise, the teachers need to allow children to make choices and initiate activities in their environment, particularly in their teaching approach and classroom management system. Thus, the likely effect of the methods, such as the constructivist learning approach could be fully explored as a possible resort to this quest.

C. Importance of self-esteem

The role of self-esteem in the constitution of human personality can never be overemphasised. It is for instance an individual's self-esteem level that measures the extent to which people love and how they feel about themselves. This translates into a high potential for self-protection, for it has been proven that people are likely to try their best to protect their self, if they can confirm and maintain it. In that regard, people with low self-esteem are likely to feel bad about themselves, and hence prone to bad effects of the environment they live in (Owens, Stryker & Goodman, 2001). Not only that, according to Owens, Stryker & Goodman (2001), self-esteem is associated with several psychological phenomena consisting of social and psychological problems, including academic performance. A high level of self-esteem is argued to be able to prevent people from facing several life problems and help them to live a socially and emotionally acceptable way and facilitate their ability to solve real-life problems.

However, the perspective may be slightly different from the view of Rousseau (2009), who attributes mainly the human's rise and fall to the impact of the society they live in saying: "Coming from the hand of the Author of all things, everything is good; in the hands of man, everything degenerates" (p8). This is no surprise since self-esteem according to Erikson (1968) and Mruk (2013) is built at an early age, approximately in Erik Erikson's Autonomy versus Shame and Doubt stage. Depending on the parents' decisions at this stage, the child may be allowed to exert enough autonomy and if they are not over-controlled; in this way, they tend to develop positive self-esteem, future relations and interaction with others. However, the situation may be different, if the child is denied such a chance and is likely to express timidity and isolation.

Emanating from the above arguments, arises the fact that there are multiple factors that lead to normal human personality development or fluctuations in our personality. These factors may include the teacher's decisions and teaching approach, their family as well as social relations and status or even their health-related matters among others. Nevertheless, the scope of the current study bounds it to the possibility of the teaching method as being a factor of self-esteem and/ or vice versa.

D. Relationship between constructivist methods and learners' self-esteem

The uniqueness and awareness of individual identity are what constitute their self or their personality. On the other hand, the individual self consists of two active variables, namely cognition and self-esteem, which are interdependent in building a person's character (Owens, Stryker & Goodman, 2001). In other words, to fully understand and be themselves, people rely on their Self-esteem, which is judged to be similar to their self-identity and which further helps them to feel a sense of belongingness and gets them to value what they can do for themselves and others (Greene, 2003). It is worth noting that, human self-esteem, according to Mruk (2006) is usually judged in terms of how high, medium or low it is. However, it may have more dimensions, depending on the factors contributing to its build-up, though each one of these dimensions may lead to the same three self-esteem levels.

In that regard, the factors such as our felt strengths or weaknesses, beliefs, achievement and aspirations among others may also determine the way we judge ourselves, thus affecting our self-esteem (Greene, 2003). These factors are measured in terms of how people relate to one another, particularly, in the families and at school, which are considered to make up social environments where the development takes place.

In fact, after family, the children pursue their development process in school, where the teacher's decisions in terms of treatment and teaching methods contribute a great deal to the learner's personality development (Mruk, 2013). One such method is the use of the constructivist approach, whose features are marked by a friendly relationship between teacher and learner as well as learner-and-learner. It has been observed that some teachers' treatment of the learners may result in positive or negative perceptions of themselves or academic work and environment.

When learners are allowed to work in groups, given freedom and equal opportunity to participate in the learning-teaching process, they display a high sense of belonging, feel strongly attached to the school and have a strong level of confidence in themselves (Leung and Choi, 2010). To this effect, heterogeneity of the peer groups during the learning-teaching process can affect self-esteem either negatively or positively. To that effect, the low achieving learners benefit from joining high achieving peers while the high achieving ones barely benefit from joining low achieving peers in terms of academic performance though they equally benefit from this arrangement, if given a similar opportunity to express themselves (Leung and Choi, 2010). This means, that one of the ways a learner can find a better position among his or her peer group in class is the change in the role they occupy in the

learning-teaching process, especially by applying methods that are constructivist in nature, to accommodate all learners equally.

Not only that, according to Kenway (1990), through interactive learning methods, teachers can identify some academic issues related to low self-esteem and consider working on them in the curriculum delivery. Also, according to Tran and Lewis (2012) the learners, through these methods, are also able to enjoy the climate of mutual help, discussion and view sharing which characterise the constructivist methods such as the jigsaw method of learning, among others. The enthusiasm gained from the methods is not just meant to last for the short term, it is rather likely to last long enough to enhance the future interrelationships among learners and further improve their self-esteem.

This somehow indicates the benefits associated with the use of constructivist learning methods as compared to traditional methods. The studies conducted previously in that respect, proved the benefits of constructivist learning-teaching methods, particularly in terms of learners' self-esteem development. However, it was still unclear how specific subjects, namely science, contributed to this development. Moreover, the major geographical focus was on developed countries, leaving a gap in the knowledge of the impact these methods could have on the developing world, of which Zambia is part. Not only that, given the effects that the socio-cultural and economic factors matter most in the development of self-esteem, it was deemed necessary to contextualise the understanding of any links between the constructivist learning-teaching methods with the level of self-esteem of learners. That made this study indispensable to satisfy this need.

II. METHOD

Being based on the pragmatic paradigm, the nature of this study commands the use of experimental research design, which according to Kivunja and Kuyini (2017), is more suitable for both positivist and pragmatic research paradigms. In the same regard, the mixed methodology combining the quantitative and qualitative approaches was used in both data collection and analysis.

Research participants

The estimated target population consists of 16900 grade 10 pupils from 81 secondary schools in the Lusaka Province, and their physics teachers. From this population, a sample of 10 teachers and 376 pupils were selected from 5 (five) secondary schools in three different districts, namely Kafue, Lusaka and Chilanga. The purposive sampling was used to select the three districts of Lusaka Province, the 5 schools and physical science teachers to be included in the study.

Procedure

In order to assess the effect of the constructivist learning-teaching methods on the learners' level of self-esteem, Rosenberg's Self-Esteem Scale, and teacher's interviews were used as data collection instruments. The self-esteem test was administered twice, as pre- and post-treatment tests to all the 376 sampled grade 10 pupils. In this regard, the EG: $O_1 X O_2$

design, or the single group (Experiment group), undergoing self-esteem test before (O_1) and after (O_2) treatment (X), was applied. Furthermore, semi-structured interviews for teachers were equally used as data collection instruments.

Data analysis

The Related Samples Wilcoxon Signed Rank Test, Independent Samples Mann-Whitney U-test, Independent-Samples Kruskal-Wallis Test and the Z-test were used to verify the effects of the constructivist learning methods on the learners' self-esteem.

III. RESULTS

The objective of this study was to investigate the effects of the use of constructivist methods on learners' self-esteem. The self-esteem level of the learners has earned this study's interest due to its potential of helping the learners to feel their real value and worth, and to confidently act independently, be it in an academic environment or solving real-life problems.

A. Teachers' views on the effects of their applied methods and learners' self-esteem

In order to examine the effort made by teachers to improve their learners' self-esteem levels, the participants were asked whether they were mindful of the effect of their preferred teaching methods on learners' self-esteem. All the participants responded positively to the question, meaning they were confident that the methods they chose to apply in the classroom were selected in the hope that they could promote the learners' self-esteem. Further, it was revealed through the interview that they proceeded differently to assure the individual learners' self-esteem was safeguarded. To do that, some would try by appreciating the correct answers by the pupils, engaging every pupil without segregation, and varying activity levels to make sure every pupil found what could be easily manageable for them. Furthermore, avoiding ridiculing the wrong answers produced by the pupils and by rather encouraging them to do better next time, or even engaging them in active groups, whereby every pupil had an equal chance to participate and showcase their rich experiences were found to be practised. One of the participants narrated this in the following words:

I usually give them some group activities such that each one has to contribute and participate in the learning process, in order to make everyone feel valued at the end of the day (Participant 8)

However, the teachers' views were to be supplemented by the pupils' self-esteem test, to verify their point of view.

The data to assess the effects of the use of constructivist learning-teaching methods on the learners' self-esteem was corrected in two phases, namely the pre-treatment and post-treatment assessment. In both cases, the same Rosenberg's Self-esteem Scale was utilised to measure the learner's levels of self-esteem. Between the two tests, the experimental teaching, through the use of the Constructivist Learning Model was applied to teach physics for a period of four months.

The classes to take part in the experimental process were randomly selected, using simple random sampling, before the test was administered.

B. Pre-treatment tests findings

The pre-test was run before the beginning of the experiment, i.e., teaching using the constructivist learning model, whose outcome would later be used to study the effect of the methods on the change in the learners' level of self-esteem. The pattern of the outcome of the pre-treatment test for the pupils' self-esteem levels was presented using table 1, whose readings indicated that, before the constructivist learning model was applied, 305 (81.1%) pupils had a normal or average level of self-esteem, while 38 (10.1%) had a high level and 33 (8.8%) recorded a low level of self-esteem.

TABLE 1: Pre-test Self-esteem levels of the Pupils by gender

		Pupil's Gender		Total
		Female	Male	
Self-esteem Levels for Test 1	High	25	13	38
	Average	173	132	305
	Low	21	12	33
Total		219	157	376

It was further noticed that in the pre-test, 25 (11.4%) girls out of 219 who took the self-esteem pre-test proved to have high self-esteem levels, whereas 173 (79.0%) had the average level of self-esteem. Additionally, 21 girls (9.6%) recorded a low level of self-esteem before treatment. As for boys, out of 157, it was 13 or 8.3% who scored high in the level of self-esteem, while 132 (84.1%) recorded the average level and 12 (7.6%) boys had low self-esteem. However, considering the observed disparities in terms of the levels of self-esteem results among boys and girls, it was deemed necessary to find out that the effects of gender, as well as other underlying factors such as age, could not affect the actual test results.

To that effect, the Mann-Whitney U Test used at $\alpha = .05$ proved that there was no significant difference in the distribution of the self-esteem scores across the gender, at $p = .209$. This means that the pupils' gender had got no significant effect on their level of self-esteem.

Additionally, the related samples Wilcoxon Signed Rank Test proved no significant difference in the pupils' self-esteem distribution across their ages, at $p = .451$. This implies that, like gender, factor age also, exerted no significant effects on the pupils' pre-test self-esteem scores.

Nonetheless, to verify the effect of the constructivist teaching method on the level of the pupils' self-esteem, it was necessary to apply the constructivist learning model for four months and then measure the level of pupils' self-esteem once more.

C. Post-treatment tests findings

After the experimental process, i.e., learning using the constructivist learning model, the pupils sat for the second self-esteem test, again using the Rosenberg Self-esteem Scale, and the results were processed and categorised using Microsoft Excel. The test outcome was that, after the use of the constructivist learning-teaching methods, the number of pupils with an average or Normal level of self-esteem went up to 330 representing 87.8% of all the participants. Conversely, the number of pupils with High levels of self-esteem went down to

28 or 7.4%, while those with low self-esteem went down to 18 (4.8%) from 33 (8.8%).

The categorisation of the results by gender further revealed that 17 (7.8%) girls scored high in self-esteem levels, 185 (84.5%) scored average and 17 (7.8%) recorded low self-esteem levels. As for boys, 11 (7.0%) scored high on the post-treatment self-esteem test, whereas 145 (92.4%) got the average and only one (0.6%) scored low on self-esteem. The very same findings were tabulated as shown in table 2.

TABLE 2: Post-treatment self-esteem test results by gender

		Pupil's Gender		Total
		Female	Male	
Self-esteem Levels for Test 2	High	17	11	28
	Average	185	145	330
	Low	17	1	18
Total		219	157	376

These observations were also subjected to a statistical test in order to find out whether they reflected the actual picture of the outcome of the test.

D. Pre-Post-test findings

Before running the required statistical tests, to compare the pre- and post-test results, the two sets of results were confronted with each other and the comparison of the two sets of results helped in processing table 3:

TABLE 3: Cross tabulation of the pre-treatment and Post-treatment self-esteem results

		Self-esteem Levels for Test 2			Total
		High	Average	Low	
Self-esteem Levels for Test 1	High	7	31	0	38
	Average	21	272	12	305
	Low	0	27	6	33
Total		28	330	18	376

The results show that 272 (72.3%) pupils scored average in both tests, 7 (1.9%) scored high in both while 6 (1.6%) pupils scored low in both self-esteem tests.

Noting that the test scores were not normally distributed, the non-parametric statistical test the Related Samples Wilcoxon Signed Rank Test was used to prove the existence of the significant difference between the pre- and post-treatment self-esteem test results at $p = .003$. However, since the difference obtained above could not provide the direction of that difference between the two sets of results, it was deemed necessary to run the Z-test, which resulted in $Z(2, N = 376) = -3.002, p = .003$. The Z- critical value of -3.002 implies that the post-treatment self-esteem results were significantly higher than the pre-treatment self-esteem test results.

However, this could not provide a strong ground for a valid final conclusion that the difference was solely due to the effect of the application of the constructivist methods while teaching. This is why the variables such as age and gender were once again tested against the post-test results to find out whether they could have exerted any effect on the test outcome, as shown in table 4.

Independent Samples Mann-Whitney U-test was used and resulted in $p = .599$, implying that H_0 would be retained. That

means, the pupils' gender would not affect the self-esteem results of pupils, hence should not be treated as an extraneous factor that could threaten the validity of the study outcome.

TABLE 4: Test for the effect of gender on the post-treatment self-esteem results

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Post-treatment Self-esteem Results is the same across categories of Pupil's Gender.	Independent-Samples Mann-Whitney U Test	.599	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .050.				

The pupils' age was also tested, but this time using the Independent Samples Kruskal-Wallis Test, and the outcome is presented in table 5.

With $p = .757$, the Independent Samples Kruskal-Wallis Test, suggested the retention of the H_0 , hence expressing the variable age of pupils had no influence on the post-test results as it did on the pre-test results.

TABLE 5: Test for the effect of the age on the post-treatment self-esteem results

	Null Hypothesis	Test	Sig.	Decision
1	The distribution of Post-treatment Self-esteem Results is the same across categories of Pupil's Age.	Independent-Samples Kruskal-Wallis Test	.757	Retain the null hypothesis.
Asymptotic significances are displayed. The significance level is .050.				

E. Classroom Management in terms of learners' discipline during the lessons

In line with the major learning-teaching approaches practised in teaching physical science, the teacher's classroom management style was explored for analysis. In this regard, the question was asked to find out how the participants managed discipline in their classrooms during the learning-teaching processes. In response, four out of ten participants indicated that they actually applied the preventive measures such as encouraging active participation in classroom activities, so that the learners did not get distracted or engage themselves in distractive activities. The other four participants responded that they used the social contract style, by encouraging every learner to respect the social order as a way to help and support one another in the classroom, and in order to realise their purpose of being in school. Some of their responses were reproduced as one participant stated:

In class, I usually enforce discipline by involving everyone in the lesson to enhance participation. I also try to reduce activities to per individual. That way each one gets busy, especially in the laboratory (Participant 3)

Another participant added

In a class or the laboratory, I do manage discipline by reminding the pupils about why they are in school, and I also try to enhance discipline by reminding them (pupils) of the laboratory rules. In that way, they can behave appropriately, not only for everyone's sake but also for their own safety in the laboratory (Participant 7)

However, two participants mentioned punitive measures such as chasing the undisciplined pupils out of the classroom or the laboratory.

IV. DISCUSSION

This study sought to find out the effects the use of constructivist methods in teaching physical science would exert on the learners' self-esteem. This is in line with the assumption that looking at the outcome of education through the lens of academic performance alone would be a too narrow vision. Rather, the additional development of some personal and affective features of the individuals (learners), such as self-esteem is necessary for the better use of the education output, both for individual fulfilment and their national development.

In that same respect, this study revealed that teachers were confident that they strove to promote the learners' self-esteem, through their chosen teaching approach and classroom management. This finding also meets the expectations of Bernstein et al (2008), who assume that, apart from their homes, in their families, learners would build their self-esteem at their schools with the help of a teacher. To do that, the teacher should assure the learners, of normal self-esteem by providing them with a conducive environment to help them discover their competencies and make choices about their learning activities (Bernstein et al, 2008).

However, this study further revealed that some teachers still applied punitive and authoritarian measures such as chasing the offenders outside the classrooms to discipline their pupils. This is characteristic of the traditional methods, predominant with the perennialist and essentialist teachers, which are thought to not only hamper the learners' freedom of expressing their academic views but also lead to their poor cognitive development and low self-esteem level (Zirhlioglu and Yayla, 2016).

Fortunately, on a positive side, interview findings disclosed that the mostly applied approaches to safeguard the learners' self-esteem were among others, the use of a reward system by appreciating the correct answers produced by the pupils, fair engagement and treatment of pupils, and striving to make them comfortable with classroom activities. Concurring with the findings by (Ames and Miller, 1994; Deci et al., 1982; Demirdag, 2015) cited in Zuković and Stojadinović (2021), it is quite safe to say that this kind of positive and respectful teacher's treatment of their learners could also positively affect the normal development of their self-esteem. This practice is equally highly beneficial in the sense that it actually further, grants learners, the chance to apply their individual subjective experiences in order to transform their 'novice knowledge' into 'expert knowledge' (Nawaz, 2012; Marion and Leather, 2015). This was further reinforced by the pre-treatment self-esteem test outcome whereby 91.2% of the pupils had a high or average level of self-esteem.

Moreover, the post-test self-esteem results in this study proved an increase in the average level of self-esteem by the pupils. This improvement in terms of the learners' self-esteem level could be explained, in agreement with Leung and Choi (2010) observation, by the fact that the constructivist learning approach used, allowed learners to work in groups, giving them

freedom and equal opportunity to participate in the learning-teaching process, and as a result, they demonstrated a high sense of belonging, felt strongly attached to the school and experienced a strong level of confidence in themselves.

Not only that, the democratic style of classroom management which was also revealed to be practised by the participants was proved to promote a sense of responsibility as well as the development of multiple real-life skills in class. It has also got the potential of increasing the learners' confidence for future success, which is one of the aspects of high self-esteem. This aspect had equally been observed by Bahufite (2015) to be enhanced through the use of constructivist learning methods in Zambian schools.

Moreover, Piaget's perspective that proper learning is driven by intrinsic motivation rather than external motives such as rewards and punishments, which enlightened this study, is also in agreement with both findings and observation. In this regard, the teacher's guiding role in both the learning-teaching process and classroom adequate management can be better undertaken with consideration of learners' stages/ levels of cognitive development (Cholewinski, 2009; University of California, 2014; Nawaz, 2012).

Coincidentally, this study noticed an improved self-esteem level in the post-test, as compared to the pre-treatment test results. This finding agreed with and could be justified by the concept that any social behaviours are determined by a combination of effects of identity and self-esteem as cognitive and affective players respectively and the two are proved to depend on each other (Owens, Stryker & Goodman, 2001, Bahufite, 2022). To that effect, the results further reaffirmed the effect of the learners' affective part of behaviour by the social learning environment, provided by the constructivist learning approach, on the two components of the behaviours. This study results hence constitute proof that the use of the constructivist methods had improved the learners' level of self-esteem.

Not only that, this study's results further proved that the learners' involvement in the teaching-learning process can induce their personal changes as well as the acquisition of special skills through the motivation provided by the interactive learning environment, as compared to the traditional learning environment (Fernando and Marikar, 2017). Nonetheless, this observation differs from the study by Kim (2005), which found no significant relationship between the use of constructivist methods and improvement or decrease in learners' self-concept. This means that the teaching approach might not have been the only factor at play in the observed rise in the level of learners' self-esteem. The other factor of this variation in self-esteem, according to Zuković and Stojadinović (2021), could be the gender and age of the pupils. However, the findings in this study ruled out this possibility, as it could not prove a significant effect of pupils' gender and age on their level of self-esteem. Besides this, the observation by Kenway (1990) emanating from research on a similar topic, conducted in Australia and the USA, showed no difference between boys and girls in terms of self-esteem and further showed that age could be excluded among the factors of self-esteem.

Consequently, after analysing the effects of the learning-teaching approaches such as the constructivist learning-

teaching approach on the learners' self-esteem, it was generally observed that the applied teaching methods in the classroom, had got a potential effect on the learners' teaching methods. However, this is not all, as even the underpinning factors such as classroom management affect the learners' self-esteem and personality in general, had their contribution to this effect. We can therefore concur at this level with Bahufite (2015) that high self-esteem can be enhanced through the use of constructivist learning methods in Zambian schools. This means that some low levels of self-esteem observed in this study could have resulted from the aspects of the traditional teaching approach noticed during the research.

In this regard, we can equally concur with the various observations that the use of a constructivist learning environment in the classroom, helps learners to overcome some negative or pessimistic feelings, either related to gender inequality, negative locus of control as well as the social dependence due to the teacher's knowledge monopoly in the classroom (Staib, 2012; Kristinsdóttir, 2008; Cholewinski, 2009; Jimoyianis, 2012; Yzerbyt, Lories and Dardenne, 1998). However, these two latter factors were not major and hence not fully covered by this study, hence suggesting some future studies to put special emphasis on their potential effects.

V. CONCLUSION

This study confirmed the link between the cognitive and affective parts or components of learners' behaviour as well as the effect of the social learning environment, provided by the constructivist learning approach, on the two components of the behaviours.

Moreover, the level of self-esteem is independent of the learners' gender or age, hence the conclusion of the ultimate positive effect of the constructivist learning-teaching methods on the learner's self-esteem. To that effect, Mostly, the high sense of belonging, intrinsic motivation and a strong level of confidence in themselves, created by constructivist methods have a role to play in learners' self-esteem.

This improvement in learners' self-esteem resulting from the constructivist learning-teaching methods is further justified by the fact that when learners are allowed to work in groups, given freedom and equal opportunity to participate in the learning-teaching process, they demonstrate a high sense of belonging, feel strongly attached to the school and a strong level of confidence in themselves.

We can therefore conclude that the learners' self-esteem can be fully enhanced through the use of constructivist learning methods, rather than traditional teaching methods in Zambian schools.

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