

The Use of Cartoons as a Teaching Tool to Enhance Student Learning in Economics Education

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ABSTRACT Excellent and effective teaching demands a host of devices, techniques and strategies not only to achieve cross critical outcomes, but because variety, itself, is a desideratum. One teaching instrument which perhaps is too seldom used, is the economics cartoon. To encourage this development, learning activities become important. This paper investigates why Economics subject didactics students prescribed to cartoons as a teaching tool to enhance their learning. A survey was conducted to determine the use of cartoons as an effective teaching tool in Economics education. The results of the confirmatory factor analyses indicated that the six-factor-model shows a reasonable fit, since the two out of three conditions were consistently satisfied for the six-factor-model of this study. Further, interviews revealed that cartoons positively enhanced constructive learning, cooperative learning and collaborative learning amongst peers. Suggestions were made how to use cartoons as technique to creating interest and developing critical thinking and reflective teaching skills in Economics education.

INTRODUCTION

Excellent and effective teaching demands a host of devices, techniques and strategies not only to achieve cross critical outcomes, but because variety, itself, is a desideratum. One teaching instrument which perhaps is seldom used, is the cartoon. To encourage this development, learning activities become important. As an example of one approach, this paper outlines the use of cartoons as stimuli to encourage to creating interest and developing critical thinking and reflective skills in Economics (Van Wyk 2007, 2009).

It is suggested that cartoons (a term used to include stand alone illustrations, captioned or non-captioned, and short comic strip formats) have a potentially valuable contribution to make. Visually the impact is immediate and all students, irrespective of age or background, are able to respond in some way to the educational point being made.

The value of humour in the teaching/learning process is reasonably well recognised particularly in the establishment of a positive learning environment (Sever and Ungar 1997) and the relationship between teacher and students (Pollack and Freda 1999). As a teaching strategy, alleged benefits include the promotion of understanding, increased attention and interest,

motivation towards learning, improved attitudes, productivity, creativity and divergent thinking (Parrott 1994). Other benefits include decreased academic stress and anxiety, boredom and disruptive behaviour (Powell and Andresen 1985). While the effects on learning are clearly of interest, it is suggested that the effects are probably more indirect, particularly in higher education where learning is often seen as a serious, stressful business.

There is little doubt that humour, both in pictorial and verbal forms, is useful as a device for gaining and maintaining attention and interest. Ziv (1979) reported results which indicated that if the introduction of a concept is followed by a humorous example, and then an explanation of the concept, test performance is improved. In accepting this argument, it is suggested that humour serves to illustrate, reinforce and make more comprehensible the material being taught (Powell and Andresen 1985).

The use of humour, or perhaps its overuse, in teaching has an element of risk and teachers need to be mindful of the possible unintended consequences, particularly of verbal humour. By its very nature, humour may seem antithetical to the seriousness and even solemnity that usually characterizes teaching (Powell and Andresen 1985). Experience of verbal humour suggests that delivery is a real skill, not all students will be

attentive and understand while there is the risk of offending through misunderstanding with any joke being perceived as a source of ridicule, sarcasm or as being racist or sexist.

It is for these reasons that cartoons offer a better alternative. Described as a humorous drawing, cartoons are most prevalent in newspapers as a means of political or social comment as best understood by the artist (Ziegler 1998). Short comic strips, while often simply for fun, are another source of insight into the contemporary world. Without doubt, all students will have experienced the type of humour exhibited in this form of communication. It is through the careful selection and use of appropriate and relevant cartoons that an element of humour can be introduced, where appropriate, without detracting from the intention of the teaching situation (Lochrie 1992).

There are other benefits. Modern educational theory highlights the importance of interactivity, involvement of the audience who should be stimulated to think and to learn and whose reactions should affect the conduct of the teaching (Ramsden 1992; Biggs 1999). When a teacher uses humour and is able to stimulate the students to laugh or smile then at least to that extent the teacher knows that the students have been engaged with their response providing one form of feedback to the teacher (Ziegler 1998).

Previous experience (Doring 1998) demonstrated that often it is difficult to encourage students, particularly first years experiencing the transition to higher education, to openly think and discuss new concepts especially in large classes. While their benefits have been demonstrated in nurse education (Pease 1991) and language teaching (Mollica 1976), in the foundation sociology units taught by the writer, the use of cartoons has been found to offer an effective means to develop particular skills. Their effectiveness in part arises from the nature of the discipline. So much humour is embedded in stereotypes, a concept central to sociology (Pasquali 1980). Sociologically, cartoons are a powerful means of providing social and political comment (Ziegler 1998) because so often they are unmasking - they reveal the contrast between perception and reality (Witkin 1999).

Cartoons, by their very nature, usually exaggerate a particular facet that can help focus on a suitable teaching/learning point. As a neutral resource, students are able to respond, joke about

possible interpretations, and react to the exaggerations alone, in pairs, small groups and eventually in large lecture classes. In interacting with the cartoon stimuli, they are refining their own learning and understanding while at the same time be encouraged to develop critical higher order cognitive skills.

A good collection of suitable cartoons is necessary and this can be built up over time. Once students are aware of the approach, they often assist by locating pertinent examples or in several cases, skilled students have drawn their own examples to illustrate a point. Alternatively one can be creative and use available software packages to create individual examples. The researcher content that cartoons can be used as an effective teaching tool to create a more interesting and develop a critical classroom discussion in Economics teaching. The following Economics cartoon serves as a means of introduction in the class, titled "We must tighten our belts" and "The Eskom and Government: Gravy train affair" (Mail and Guardian 2008). Both cartoons can be used as examples to illustrate the point or as an open discussion starter. Either way, students are willing to enjoy the sense of fun and contribute. The possible teaching variations are unlimited. All or some of the captions in either of the two cartoons mentioned above can be deleted and students asked to suggest a caption or even what the creator is trying to convey through the sketch alone. In the spirit of the exercise, humorous examples can provide valuable teaching points, for example, different beliefs and understandings, the openness of different interpretations and acceptance of alternative views. This research was done in the Department of Curriculum Studies in the Faculty of Education.

Economic Cartoons Used in this Study

In recent years, several attempts have been made to enhance student learning experiences by increasing their motivation, by attempting to focus their attention, and by helping them to construct meaningful and permanent records of their learning in Economics education (Van Wyk 2007: 12). The specific cartoons for this study were carefully selected, modified and aligned to achieve the learning outcomes for the modules ECT 122/142, Economics subject didactics (Van Wyk 2008a, 2008b).

Four Economics cartoons (Table 1) were used during the first semester of 2008 (February to June 2008) in the Faculty of Education, University of the Free State (UFS). The first cartoon, entitled “*We must tighten our belts*” focused on four Economics concepts of “inflation, decision making, interest rate and push-pull inflation”. Students played a UFS: T-shirt auction game for allocating a scarce resource to the highest bidder. In this game, I used a T-shirt as the scarce resource. A second cartoon, entitled “*The Eskom and Government: Gravy train affair*” concepts of scarcity, supply-demand, productivity was demonstrated by using class discussion method. After describing the purpose of the cartoon to the students, they had to demonstrate how they would use it to demonstrate the supply-demand chain and the productivity of scarce resources to produce a quality product (electricity). The third principle that was demonstrated was the

interaction between producers pertaining to milk and cheese prices in the market. The cartoon that was used entitled the “*Dairy Farmers versus Food Retailers*”

Theoretical Framework

A theoretical framework is a collection of interrelated concepts, like a theory but not necessarily so well worked-out. A theoretical framework guides your research, determining what things you will measure, and what statistical relationships you will look for. Theoretical frameworks are also important in confirmatory factor analysis, whereby clear ways about what is going on, and are trying to learn more. There are two reasons why theoretical frameworks are important here. First, no matter how little you think you know about a topic, and how unbiased you think you are, it is impossible for a human being

Table 1: Economic cartoons used during the contact sessions

<i>Title of economic cartoon</i>	<i>Outcomes of the cartoon</i>	<i>Participants</i>	<i>Concepts</i>
We must tighten our belts	Students demonstrate the ability to use the decision-making model for allocating a scarce resource. Example of a UFS t-shirt	Students highest bidding process	Inflation targets, decision making, consumers, retailers
The Eskom and Government : Gravy train affair	Students understand the supply chain and through specialization of scarce resources how to produce a quality product. Produce a quality book through one pierce of A4-paper+paper clip+ ruler +pen	Small groups of five members	Scarcity, electricity, resources, investment, social responsibility
Global warming conference	Students participate in a simulation and demonstrate how the forces of supply and demand determine price and how changes in the price of a product and service affect the quantities demanded and supplied. Example of consumers/producers	All students participate as buyers and sellers	Environment issues, global warming, developed, developing countries, emissions, green house effect
Bob, you're time's up!	Students explain how demand and supply shift in response to changes in factors affecting consumers and producers, respectively. Then they predict the effects of changes in demand and supply on market prices and quantities traded. Debating impact on economy.	Individual students	Southern African Development Community (SADEC), economy, New Partnership for Africa Development (NEPAD)
Dairy farmers versus Food retailers	Students analyze how changes in determinants of supply or demand affect market prices and quantities exchanged. Students analyze how changes in one market affect other markets.	All students: Individual accountability	Milk prices, dairy farmers, food retailers, super markets, monopoly

not to have preconceived notions, even if they are of a very general nature (Costello and Osborne 2005). The rationale for using a confirmatory factor analysis (CFA) for this study, because this instrument is a widely utilized and broadly applied statistical technique in the social sciences. CFA has been established as a powerful and precise method for analyzing the dimensional structure of a set of observed variables in terms of latent variables (Holfve-Sabel and Gustafsson 2005). The main applications of factor analytic techniques are: (1) to reduce the number of variables and (2) to detect structure in the relationships between variables, that is to classify variables. Therefore, factor analysis is applied as a data reduction or structure detection method. In recently published studies, CFA was used for a variety of applications, including developing an instrument for school evaluation (Lovett et al. 2002), assessing the motivation of Puerto Rican high school principals (Morris 2001), determining the attitudes towards school, teacher and classmates (Holfve-Sabel and Gustafsson 2005) and determining what types of services should be offered to college students (Majors and Sedlack 2001). A survey in 2005 was conducted which yield over 1700 studies that used some form of CFA (Costello and Osborne 2005). Well over half listed principal-components analysis (PCA) with varimax rotation as the method used for data analysis.

The Purpose of the Study

This paper investigates the use of cartoons as a teaching tool to enhance student learning in Economics education.

METHODOLOGY

The researcher conducted an empirical investigation by employing quantitative and qualitative research methods. A survey and interviews were used to investigate the impact of using cartoons as a teaching tool on student learning in teaching of Economics.

Sampling

Sixty- eight final year Baccalaureus Educationis (Bed)- and Post Graduate Education Certificate (PGCE) -student teachers in the Faculty of Education were identified for the

research study. These students were registered for Economics subject didactics which comprises of Teaching methods, Teaching media, Assessment and Home work (Van Wyk 2009). The sampling consisted of thirty- five percent (35%) Black students and sixty- three percent (63%) White students. Further, 73.6% of the students were females (N=48) and 26.4% were males (N=20). Students were taught by the researcher over a 12 week period of two contact sessions of 55 minutes per week for the second semester.

Research Instruments

A literature review of different types of economic cartoons was studied and a closed structured questionnaire was designed. The researcher employed a twenty-one item questionnaire as a survey technique to obtain data. The items in the questionnaire were designed to collect information, and to determine use of cartoons as a teaching strategy in Economics teaching. Interviews (n=8) were conducted, recorded and captured the results of responses. A statistical tool, the Cronbach's alpha coefficient, was used to measure the internal consistency among the items in the questionnaire (Starborn 2006; Huysamen 1993). Furthermore, Starborn (2006) mentions that Cronbach's alpha coefficient is an appropriate test to use to assess the internal consistency of scales that are computed from Likert items. To test the reliability of the research results, Cronbach's alpha coefficient was calculated for items in the questionnaire. Calculated test for reliability showed that item 2 ($\alpha=0.9471$), item 3 ($\alpha=0.9611$), item 7 ($\alpha=0.9101$) and item 15 ($\alpha=0.8570$) were reliable items in the survey.

The reliability coefficients of the items in the questionnaire pertaining to the effect of the use of cartoons in Economics education range between $\alpha=0.8570$ and $\alpha=0.9611$. The overall reliability coefficient is high ($\alpha=0.9188$).

Procedure

Only students who were registered for modules ECT 122 and 142 (Economics subject didactics) was lectured for twelve weeks during two contact sessions per week for the second semester in 2008. During these twelve weeks contact sessions, students were exposed to different types of contemporary economic issue

such as unemployment, poverty and inflation, cartoons which was published in the daily or weekly newspapers or economics magazines, such as "Mail and Guardian, Business Day and The Economist". After completion of the module, a closed structured questionnaire was completed by students (N=68). The researcher calculated the mean scores and standard deviations to determine effect for using cartoons as a teaching method in Economics teaching. The results from the interview responses of the quota sampling (N=8) were recorded, analyzed and reported.

RESULTS AND DISCUSSION

The findings and discussions of this study are reported in the presentation of the descriptive statistics, coefficient alpha, correlation of a six-factor-model and confirmatory data set for six factor analysis. Analysis of the surveys indicated regular use of cartoons by student teachers in their micro teaching, experimental teaching, practice teaching and mentorship programme. Most student teachers respond very positive about the use of cartoons in their class presentations. From the interviews conducted, 87,5% of the student teachers indicated that they used cartoons during the presentation of Economics in either in the micro teaching class, experimental teaching class, practice teaching class and mentorship programme.

Based on data obtained in Table 2, mean

scores and standard deviations for each item/theme in the section of the questionnaire reported. As can be seen in the table, the average scores per items vary between 1.9 and 3.8 (Scales 1-4). The corresponding standard deviation (SD) vary between 0.3 and 0.5. The coefficient alpha was computed for each factor and for the total instrument to determine the internal consistency of each factor. The results in table 2 indicate that the internal consistency is high per factor, varying between 0.82 and 0.94, except for factor 4, 0.74. The alpha coefficient for all 21 items is 0.84. Standard deviations vary from 0.3 to 0.5. A Likert scale: 1= Strongly disagree (SD); 2= Disagree (D); 3= Agree (A) and 4= Strongly agree (SA) was used to obtain data.

Based on the data obtained in Table 3, the correlation coefficients among the six factors vary between 0.52 and 0.90. According to results, the correlation coefficient among constructive learning and contextual learning is high, vary between 0.90 and 0.83, which implies a high correlation emerged.

A confirmatory factor analysis was conducted to assess the construct validity of the instrument for the total data set of the six factors as indicated in table 3. A confirmatory factor framework is assumed to fit the data if three criteria are met for this study:

- Chi-square divided by the degrees of freedom (df) should be lower than 2, a p-value that differs from zero;

Table 2: Number of items, number of respondents, min. and max. scores (scale of 1-4), standard deviation (SD) and coefficient alpha per characteristic

Items of questionnaire	Number of items	Student teachers	Min.	Max.	Mean score	SD	Alpha
1. Constructive learning	21	38	2.0	5.8	3.8	0.5	0.94
2. Contextual learning	17	38	2.2	5.1	2.9	0.4	0.88
3. Social skills	16	38	2.3	4.8	2.5	0.5	0.82
4. Collaborative learning	19	38	2.0	4.1	2.1	0.3	0.74
5. Critical thinking	17	38	2.3	4.8	3.0	0.4	0.87
6. Small group learning	10	38	1.8	3.7	1.9	0.5	0.79
All items in survey	21	38	2.3	4.7	2.4	0.4	0.84

Table 3: Correlation between the six factors

	1	2	3	4	5	6
1. Constructive learning	-	0.81*	0.90*	0.79	0.78	0.69
2. Contextual learning		-	0.83	0.69	0.71	0.65
3. Social skills			-	0.61	0.69	0.64
4. Collaborative learning				-	0.52	0.62
5. Critical thinking					-	0.61
6. Small group learning						-

* all correlation coefficients are significant at the 0.01 level (2-tailed).

Table 4: A confirmatory data set for six-factor-model analysis

<i>Data set</i>	<i>N</i>	<i>Chi-square</i>	<i>df</i>	<i>p-value</i>	<i>Cmin. df</i>	<i>RMR</i>	<i>GFI</i>	<i>AGFI</i>
Total	68	356.36	145	0	2.4	0.017	0.78	0.85
Section 1	34	279.66	145	0	1.8	0.014	0.76	0.74
Section 2	34	333.12	145	0	1.9	0.015	0.8	0.73

- The root mean square residual (RMR) should be lower than 0.07; and
- The goodness-of-fit-index (GFI) and the adjusted goodness-of-fit-index, which takes the number degrees of freedom into account, should be higher than 0.80 (Costello and Osborne 2005; Saris and Stokhorst 1984).

Based on data obtained in table 4, the results of the total data set of the six factors: chi-square [145 df] = 356.36, $p = 0.000$, a root mean square residual (RMR) of 0.015, a goodness-of-fit index (GFI) of 0.78, and adjusted GFI of 0.85. Thus, for the six confirmatory factor analysis, the first condition specified by which is not satisfied i.e., the first condition p -value does not differ from zero and the chi-square divided by the degrees of freedom is not lower than two but equal to two, whereas both other conditions are fulfilled. Both sets as shown in table 4 were satisfied. The results of the confirmatory factor analyses indicate that the six-factor-model shows a reasonable fit, since the two out of three conditions were consistently satisfied for the six-factor-model of this study.

From the transcription of interviews it was clear that the cartoons impacted positively on student learning. Data obtained from the interviews reveal that students have benefited significantly from participated in the cartoons used in Economics subject. I was interested in exploring the impact of in-class cartoons in Economics education on student motivation and learning. As such I collected and analyzed primary data using an interpretive paradigm, narrative approach. The narrative approach is an interpretive, qualitative method of research. Qualitative research is defined as “the use of qualitative data such interviews, documents and participation observation data to understand and explain social phenomena” (Myers 1997). Moreover, Rubin and Babbie (1989) argue that the qualitative approach as an inductive approach is eminently effective in determining the deeper meaning of experiences of human beings and in giving a rich description of the specific phenomena being investigated in reality. In this second part of the research, a quota sampling (N=8) were used and helped me gained

insight into the phenomenon (cartoons as teaching strategy) as it permitted an in-depth search for meanings and reasons. The use of cartoon-based approach is associated particularly with small-scale research, focusing on one instance (students’ learning capacity) of a particular phenomenon with a view to providing an in-depth account of events, relationships, experiences or processes occurring in that particular instance (Babbie 2001). Hence, the cartoon-based approach is not a method for collecting data, but rather a research strategy whereby a variety of research methods such as interviews, observation, and reflective journals can be used.

I used purposive (quota) sampling, which is a common feature of qualitative research (Brink 1996). The characteristic feature of this kind of sampling are that it is usually more convenient and economical and that it allows the researcher to handpick the sample, based on knowledge of the area and phenomena being studied. As such I collected and analyzed primary data using a qualitative approach. I opted for a qualitative approach as opposed to quantitative due to the exploratory nature of this research. Qualitative research is defined as “the use of qualitative data such interviews, documents and participation observation data to understand and explain social phenomena” (Myers 1997). Moreover, Rubin and Babbie (1989) argue that the qualitative approach as an inductive approach is eminently effective in determining the deeper meaning of experiences of human beings and in giving a rich description of the specific phenomena being investigated in reality. From the data analysis the following themes emerged:

Positive Experiences and Increase Motivation for Participation

Students were positive, motivated and alluded to the lecturer’s professionalism with regard to Economics lessons preparations and planning, facilitation skills, positive frequent feedback on tasks and the use of relevant assessment activities during class sessions. In this study respondents were of the opinion that the Economics

games were well planned, organized, implemented and professionally presented to give them (students) ample opportunities to learn and practice during contact sessions. Students also indicated that their personal relationships improved and that they developed professionally in terms of interdependence and personal interaction. Students performed the seven cartoons with a particular goal in mind. Students were highly motivated to participate in the cartoon presentations. First, they were eager to score high marks (CASS marks) for promotion purpose and secondly, students enjoyed taking part in the discussion of cartoons, particularly if there are monetary rewards (money, UFS cap, Parker pen set, M & M-chocolates and Smarties-sweets) involved. The results suggest that reward structures lead to greater interaction and to more effective strategies for utilizing the games as teaching strategy in their own praxis. Some of the key extracts from the interview-transcripts are: As one student (Jessica) remarked: *“I was also motivated to participate when presenting my cartoon and explains why I used the specific cartoon. Further, we were impressed by how the lecturer executed his roles and responsibilities during our sessions. He was absolutely professional in his lesson planning, always on time to present a lesson. I would like to know how much effort, time our lecturer spend to prepare materials, compile results, and prepare for subsequent lectures, discussions or assignments that we submitted. We must acknowledge his efforts for empowering us in using the different cartoons for critical thinking and creative thinking. I appreciate was the assistance and support... I mean when we struggle with some of our cartoon activities”* Some respondents were of the opinion that the cartoons influence them positively. One respondent (Hanlie) noted: *“We gained valuable and constructive criticism after our researched cartoon. It was an excellent way to reflect on one’s own teaching practice. The more we practiced... the more we grew in confidence. Our lecturer was accessible and available and we were able to consult with him if we struggled with parts of our assignments.”* Greenlaw (1999) and Henson (1982) reported that teaching with simulations and games improved student motivation and retention. On frequent feedback, one student (Tumi) mentioned that *“... what I really appreciated of the lecturer is the frequent, early,*

positive feedback that supports me and other students’ beliefs that they can do well.” Further, Durkin and Barber (2002) mentioned that cartoons supported positive adolescent development skills. Another study conducted by Butler et al. (2001) reported that through cartoons active learning within a lecture increased the impact of short, in-class writing exercises.

Improved Social and Collaborative Competencies

The cartoons as a teaching strategy provide structure for interactions, reward students for collaboration and problem solving. Further, cartoons promote class discussions, cooperative learning, individual accountability, positive interdependence, and the need for group processing and feedback. Whereas students’ self-chosen social groups are often homogenous, with the rotation system of some games, new members were randomly selected to form heterogeneous teams. In addition to promoting diverse interactions among students, cartoons provide a way to reach and engage students who may have a variety of learning styles. The effectiveness of the cartoons enabled students to acquire and improve their social skills. These social skills were interpreted as interpersonal situations such as the abilities to bargain, persuade, collect and categorize information in a manner that facilitated decision making, competition, cooperation and command. Feedback from other students can show that participating with the material in the classroom is acceptable, and also provides positive reinforcement for working with others to accomplish the goal of the activity. Also, stronger students model the ways that they work with the material for students with less developed study habits and skills. The in-class games activities can persuade students to rely on each other more as they study outside class. Such a context for learning supports the development of social competence (Huyen and Nga 2003). One student (Mandy) said: *“...the cartoons we reflected on enhanced my knowledge of the application of the Economics. I preferred this cartoon-based strategy because it enhanced my confidence in understanding Economics concepts and content. I enjoyed the role play cartoon.* Research studies reported that positive effects such as positive interdependence, face-to-face interaction, sharing, caring and support developed among students when they played together

(Durkin and Barber 2002; Media Analysis Laboratory 1998; Prensky 2001; Rosas et al. 2003; Strasburger and Donnerstein 1999). A study conducted by Henson (1982) concluded that teaching with educational games develop students' social skills (presentation and communication skills). Pertaining to socialization, one student (Murial) noted: *"Our group (Nomvula, Jan-Pierre, Gladys, Lin-Chi and Anita) were diverse. We had to be sensitive when using examples of cartoons... concerning to specific career opportunities. We were voted by other groups as the best for sharing, supporting and excellent relationships. We made provision for differences and accommodated other team members. We became really good friends!"* Three respondents (Riaan, Tumi, and Sandra): mentioned that a specific method namely: the *"think-pair-and-share"* technique demonstrated by the lecturer enhanced their ability to grasp the teaching tool, Economics content and concepts positively: *"...every third class session, we moved to a different group for the Economics quizzes. In doing so we shared, cared and supported members working on the same task. This in turn improved my social interdependence skills such as communication, effective debating of Economics issues and defending our position in: "The Eskom and Government : Gravy train affair"*

Increase Academic Achievement

Interviewees were very positive regarding the achievement of specific outcomes of Economic games played during the contact sessions. Respondents expressed gratitude towards the impact of cartoons on their learning. The cartoons promoted and increased their academic performances in the ECT 122 modular. Pertaining to academic performance, students (Murial Tumi, and Sandra) mentioned: *"We enjoyed the role play game... the cartoon on "We must tighten our belts" play through collaborative learning. Our CASS marks really improved through the cartoon game we played. Our group increased our overall marks through the Economic quizzes. We helped and supported each...our goal was to score high marks to push our overall CASS marks. We studied very hard for our Economic quizzes... you gained more marks in this section."* Results presented do explain why cartoons increase academic performance. To the extent that

students enjoy participating in cartoons, the activities may encourage attendance or effort. Resulting changes in student behavior may cause the increase in academic achievements. Alternatively, the benefit may be a return to additional effort from the lecturer, rather than from the students, in view of the time required to prepare cartoons. Another possible explanation for benefits of cartoons is the hands-on experience of seeing theory work. It may be easier to understand how and why market price is shared between buyers and sellers after seeing this result occur in a classroom simulated market. On the other hand, the academic achievement gains may arise specifically from the cartoons.

Improve Transfer of Learning and Peer Interaction Support

Economic cartoons researched and used in this study promote transfer of learning because they require student participation and active involvement with the material within a rich context (Cruickshank and Telfer 2001). Through the different cartoons, many opportunities for students were created to practice what they learned and applying it, for example the *"The Eskom and Government: Gravy train affair"* and *"Global warming conference"* cartoons. Through this cartoon-game students demonstrated what they learned to bridge the distance between learning concepts presented in a classroom and using that information to solve a problem. Respondent mentioned that they support each other before group presentations of activities. They teach and coach other members with their part of the role play activity before class presentations. They interacted, supported, encouraged and shared ideas amongst group members. Murial and Mandy said that positive feedback and comments of activities help students feel that *"they are valued members of a learning community."* Research on peer learning (Cohen 1994; O'Donnell and King 1999; Webb and Palincsar 1996) has shown that the interaction between and among the learners in a group influences the cognitive activity that is occurring, and it is this cognitive activity that accounts for the learning that takes place. Recent research has shown that peer interaction within a learning group can be structured in ways that guide and support high-quality thinking and discussion (Cohen 1994; Webb 1989). Moreover,

different kinds of learning tasks are best guided by structures specifically designed to support those particular kinds of task. The focus in those research studies has been on structuring the interaction so students are forced to follow a particular pattern of talk in the group, thus controlling the nature and quality of their discussion and learning. Respondents (Murial, Riaan, Nthabiseng and Mandy) indicated: *“I like the way how we support each other before group presentations of activities on economic cartoons such as “corruption”. We strongly believed that interdependence and individual accountability are important elements for the success of the group. Before each class presentation, we teach and coach other members with their part of the role play activity. We share ideas how we would like to structure our presentation. What I must say, we support each other. We believe in team work. But we also believe that each group member is responsible for the success of the activity.”*

Accommodate Student Learning Styles

Respondents indicated that the cartoons effectively accommodated their learning styles. The effectiveness of applying cartoon for example *“Global warming conference”* depends on the availability and relevance of specific topics pertaining to new concepts and content within the students' frame of reference. Knowledge and skills (cognitive competence) then have to be applied to relevant cartoon situations which in turn will add value to their personal and professional development in the subject (Van Wyk 2009, 2007). Kolb and Fry (1975) discussed several learning styles in their findings toward an applied theory of experiential learning. According to Kolb et al. (quoted by Grosser 2001; Maja 2006), learning styles refer to orientations towards approaching learning tasks and processing information in different ways. That is why one of the central ideas behind Outcomes-Based Education is that learners learn differently, so that teachers cannot expect all learners to achieve outcomes in the same way. A broad understanding of learning styles will therefore help teachers to understand and support learners throughout learning processes, aiming at promoting a sense of intellectual safety and security which can lead to better achievement. Learners may be extraverts who try things out, focusing on the outer world of people or introverts who think things through,

focusing on the inner world of ideas (Grosser 2001; Maja 2006). Learners may be sensors who are practical, detail-oriented, focusing on facts and procedures or intuitors who are imaginative, concept-oriented, focusing on meanings and possibilities. Further, Maja (2006) postulates that learners may be thinkers who are sceptical, tending to make decisions based on logic and rules or feelers who are appreciative, tending to make decisions based on personal and humanistic considerations. Learners may also be judgers who set and follow agendas, seeking closure even with incomplete data or perceivers who adapt to changing circumstances, resisting closure to obtain more detail. Kolb's learning style model (Kolb 1984), according to which learners' preferred style of learning can be divided into four major categories. Convergers / sensors and feelers prefer to learn by intuition, being sensitive to feelings and atmosphere, and seeing, hearing and feeling. Divergers / watchers prefer to learn through perception and observation, therefore preferring lectures and demonstrations. Assimilators/thinkers prefer to analyze logically, create understanding for themselves, preferring to read theory and study themselves. Accommodators/doers prefer to learn by trying things out and taking risks. They prefer practice to theory and enjoy learning activities that enable them to do something, such as projects, tasks and discussions. Two particular learning styles emerged from the interviews, namely the kinesthetic and converging learning styles. Kinesthetic learning is when someone learns things from doing or being part of them. Summarizing the findings of the interviews reinforced the results revealed that Economic cartoons enhanced their learning styles through positive experiences and motivated them by increasing their concentration levels of Economics concepts and content which they can now apply with confidence in real-life situations. They also said that the cartoons improved their communication skills, interrelationship skills, presentation skills and creativity skills. Based on the results of the survey and transcripts themes that emerged from the interviews, the impact of economic cartoons on students' learning was discussed with specific reference to the advantages of using cartoons in Economics education.

CONCLUSION

The purpose of this study was to report on the development of a theoretical framework and

the methodology to investigate the use of cartoons in the Economics class. Excellent and effective teaching demands a host of devices, techniques and strategies not only to achieve cross critical outcomes, but because variety, itself, is a desideratum. One teaching instrument which perhaps is seldom used, is the cartoon. The items of the questionnaire and interviews were derived from modern theories on student learning stressing the importance of creating a powerful learning environment. These theories imply that teachers should stimulate students learning towards constructive learning, collaborative learning, contextualized learning and small group learning. The results of the confirmatory factor analyses indicated that a six-factor-model comprising of 21 items fits the data well. Two of the three statistical conditions specified were satisfied, which indicates a reasonable fit (Costello and Osborne 2005; Saris and Stokhorst 1984). The internal consistency is high per factor, varying between 0.82 and 0.94, except for factor 4, 0.74. The alpha coefficient for all 21 items is 0.84. Further, the correlation coefficients among vary between the six factors are given. These coefficients were varying between 0.52 and 0.90. According to results, the correlation coefficient among constructive learning and contextual learning is high, vary between 0.90 and 0.83. The results of the confirmatory factor analyses indicate that the six-factor-model shows a reasonable fit, since the two out of three conditions were consistently satisfied for the six-factor-model of this study.

Interview results reported that students experienced high professionalism with regard to lessons preparations, presentations, facilitation and the used of applicable assessment strategies during contact sessions. Some respondents hold the view that lessons was well planned, designed and presented to give students ample opportunities to learn and practice during contact sessions. Further, students indicated that they improved personal relationships such as positive interdependence, individual accountability, personal interaction and socialization with fellow students through support. Respondents noted that the application of relevant and contextual used of Economics cartoons needs to be contextualized in relationship to the realities of the South African situation.

In summation, the confirmatory factor analyses indicate that the six-factor-model shows a

reasonable fit, since two out of three conditions were met. Further, interviews reported that cartoons as a teaching tool positively enhanced constructive learning, cooperative and collaborative learning amongst peers in the Economics class.

Emanating from the reported results and the discussion on the use of cartoons, the following recommendations are provided on how to use cartoons as an instructional strategy in economics subject didactics. Different types of economics cartoons were used as a teaching strategy to engage the students in discussion about contemporary economics issues of South Africa. However, in order for cartoons to be used effectively in the lecture room, the students have to understand how to interpret them. Their ability and skills to do so is significantly enhanced if they have an appreciation of the various elements of using it to communicate an idea of the cartoonist. The cartoon-based teaching and learning strategies which were employed enhanced the students interpretative and communicative skills to great extend. Developing students' ability to interpret the work of cartoonists contributes to a deeper understanding of contemporary economics issues in South African economy. It contributed and served as a learning tool through which students develop an ability to identify bias and formulate opinions. This advanced level of analysis occurs when students develop a knowledge and understanding of the context to which the cartoonist alludes and master the skill of cartoon interpretation. In other words, the student cannot be expected to appreciate fully the point of view crafted by the cartoonist until they have acquired an appreciation of circumstances surrounding the issue and developed the ability to identify and interpret the tools and techniques cartoonists use to communicate with their audience. Teaching students the steps involved in analyzing cartoons involves: developing a knowledge of the context to which the cartoon alludes; building the ability to recognize the visual and non-visual elements of cartoons and the way in which the cartoonist combines these to communicate an opinion; developing the capacity to discern the cartoonist's perspective; and enhancing the ability to construct a personal opinion. Secondly, the different types of cartoons could be used within an educational context. One specific teaching technique, group discussion (brainstorming) could be effectively used whereby students generate, develop and

refine ideas of economics issues such as “unemployment rate” in South Africa and presented their ideas to rest of the class. Each member of the group were asked to think creatively about solutions to solve the increase “unemployment rate” in the country. They must write down their ideas and share his or her ideas, this strategy is called “think-pair-share” session (two members per group). After think-pair-share” sessions all group members negotiates their ideas and reach consensus about their ideas to solve the “unemployment rate” for the country. The researcher content that cartoons can be used as a means of promoting interest in, and appreciation and understanding of, a particular idea, issue, event or social trend. In this way cartoons represent a very effective motivational tool – the ‘hook’ by which the teacher can gain the attention and interest of the learner(s). Cartoons can be used to initiate classroom discussion and debate, and promote a deeper level of engagement with issues via ‘critical thinking’. For example in economics we discussed “unemployment” and “the impact of HIV/Aids on labour” on the South African economy. In this context, this term ‘critical thinking’ refers to the processes by which individuals use reflective thinking to gather, interpret and evaluate information in order to formulate an informed opinion or judgment. By analyzing the ways in which visual texts, including economics cartoons, work to enhance our understanding of how a person’s feelings, attitudes and values are manipulated by such texts, we enhance their ability to identify, and perhaps challenge, dominant discourses and the capacity to evaluate various alternatives of the South African economy. Empowered by these understandings, the student is better placed to act as an agent of social change, working towards the removal of inequalities and injustices. During the class presentation of different economics cartoons, students were encouraged to use their imagination in reflecting about what the cartoon conveyed Economics subject didactics students were asked to speculate on the message being conveyed by the particular economic cartoon and even asked propose their own captions. Students were given extended academically opportunities by asking them to draw their own issues-based cartoons for an assignment (this was part of their continuous assessment module mark). Different economics cartoons proved particularly effective when used as stimulus material in examinations

and assessment tasks where an overall appreciation of a topic, rather than the restatement of specific facts, is the principal aim. The used in this particular context, cartoons provided a useful tool for assessing the ability of students to analyze economic issues. The cartoons provided the researcher with a motivational and instructional tool that value-added relevance, variety and enjoyment to the teaching and learning situation. Lochrie (1992) mentioned that cartoons are an excellent starter and as a means to an end but like any use of humour in teaching, is a resource, not the product. The following steps are proposed for the introduction of cartoons in any subject (Pollack and Freda 1997; Van Wyk 2009): (1) Plan your specific outcomes for using cartoons, identify what the objectives are for the lesson and the use of the specific cartoon(s). The objective for using the cartoon to a specific topic could either be to promote critical thinking or class discussions on contemporary economic issues. (2) Analyze the specific cartoon by applying different formats or structures such as linear or circle of flowchart diagrams or mind maps to accommodate student learning styles. Perhaps they just need a way to organize it that suits their strengths. (3) Integrate other “subjects” to the cartoon, or use the cartoon to segue into something else. (5) Use a transparency quadrant overlay as a visual guide in analyzing the cartoon. Ask students to identify the skills they learned and how that skill can help them with other areas. (6) Use graphic organizers to help students analyze the context and/or the message being conveyed in economic cartoon. (7) Ask students to create their own drawings and interpretations of an economic event such a budget (helps to inform context and evolve understanding). (8) Use quotes, either from newspapers or quotes of economic magazines. (9) Use cartoons to initiate class discussion, drama, role playing, simulations, dialogue, debate, journal and essay writing. (10) Ask the students to visit each others’ cartoons and see if they can decipher meaning to it. Maybe some students are naturally better at it and maybe some students are naturally better at drawing the cartoons themselves. Role play or simulations is one possible venue-having learners act out potential scenarios. (11) Be prepared to facilitate discussions that may lend themselves well for debate. Try not to convey your own position - strive for neutrality of the facilitator. (12) Implement your assessment strategy or tool to

see if the learners achieve the outcomes or objectives of the lesson. (13) Debriefing the cartoon.

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REFERENCES

- Biggs J 1999. *Teaching for Quality Learning at University*. Buckingham: SRHE and OU Press.
- Bossert ST 1989. Cooperative activities in the classroom. *Review of Research in Education*, 51(2): 225-250.
- Business Day 2008. The Eskom and Govt: Gravy train affair. 12 June 2008, P. 14.
- Costello AB, Osborne JW 2005. The best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research and Evaluation*, 10(7): 1-9.
- Doring A 1998. Helping the move to university. *Learning Journals Interlogue*, 9(1): 63-70.
- Haralambos M, van Krieken R Smith P, Holborn M 1996. *Sociology: Themes and Perspectives*. Australian Edition. South Melbourne: Addison Wesley Longman.
- Holfve-Sabel M, Gustafsson J 2005. Attitudes towards school, teacher, and classmates at classroom and individual levels: An application of two-level confirmatory factor analysis. *Scandinavian Journal of Educational Research*, 9(2): 187-202.
- Johnson DW, Johnson RT 1994. *Learning Together and Alone: Cooperative, Competitive and Individualistic Learning*. 4th Edition. New Jersey: Allyn and Bacon.
- Johnson DW, Johnson RT 1998. *Cooperative Learning, Values and Culturally Plural Classroom*. Boston, MA: Interaction Books.
- Leedy PD, Ormod JE 2001. *Practical Research: Planning and Design*. 7th Edition. New Jersey: Merrill Prentice-Hall.
- Lochrie K 1992. Using cartoons as an effective learning and teaching strategy. *SCRE Newsletter*. 51 Autumn. pp.8-9
- Lovett S, Zeiss AM, Heinemann GD 2002. Assessment and development: Now and in the Future. In: GD Heinemann (Ed.): *Team Performance in Health Care. Issues in the Practice of Psychology*, Raleigh, North Carolina: NC University Press, pp. 385-400.
- Mail and Guardian. "Bob, you're time's up!" 29 April 2008, P.18.
- Mail and Guardian 2008. "We must tighten our belts" 10 May 2008, P.23.
- Mail and Guardian 2008. Global warming conference. 16 May 2008, P.17.
- Majors, MS, Sedlacek, WE 2001. Using factor analysis to organise student services. *Journal of College Student Development*, 42(3): 2272-2278
- Mollica A 1976. Cartoons in the language classroom. *Canadian Modern Language Review*, 32(4): 424-444.
- Parrott T 1994. Humour as a teaching strategy. *Nurse Educator*, 19(3): 36-38.
- Pasquali EA 1980. Comic strips in the classroom. In: SK Mirin (Ed.): *Teaching Tomorrow's Nurse: A Nurse Educator Reader*. Wakefield, Mass: Nursing Resources, pp. 1-4.
- Pease RA 1991. Cartoon humour in nursing education. *Nursing Outlook*, 39(6): 262-267.
- Pollak J, Freda P 1997. Humor, learning and socialization in middle level classrooms. *Clearing House*, 70(4): 176-178.
- Powell J, Andresen L 1985. Humour and teaching in higher education. *Studies in Higher Education*, 10(1): 79-90.
- Ramsden P 1992. *Learning to Teach in Higher Education*. New York: Routledge.
- Sever A, Ungar S 1997. No laughing matter: Boundaries of gender-based humour in the classroom. *Journal of Higher Education*, 68(1): 87-105.
- Starborn K 2006. Cronbach's alpha and Likert-type scales. <http://listserv.uga.edu/cgi-bin/wa?A2=ind0605andL=spsx-1andP=29372>. (Retrieved April 30, 2008).
- Van Wyk MM 2007. *The Use of Cooperative Learning in Economics in the Further Education and Training Phase of the Free State Province*. Ph.D Thesis, Unpublished. Bloemfontein: University of the Free State.
- Van Wyk MM 2008a. *Module ECT 122-Study Guide on Teaching Methods and Media for the Post Graduate Certificate in Education for Further Education and Training Phase*. Bloemfontein: University of the Free State.
- Van Wyk MM 2008b. *Module ECT 142-Study Guide on Assessment, Year Planning and Home Work for the Post Graduate Certificate in Education for Further Education and Training Phase*. Bloemfontein: University of the Free State.
- Van Wyk MM 2009. Students' reflections regarding the use of cartoons as a teaching technique in the Economics classroom. *Paper presented at EASA International conference*, Illovo Beach, Durban, South Africa 13-16 January.
- Witkin S 1999. Taking humour seriously. *Social Work*, 44(2): 101-104.
- Ziegler J 1998. Use of humour in medical teaching. *Medical Teacher*, 20(4): 341-348.
- Ziv A 1979. The teacher's sense of humour and the atmosphere in the classroom. *School Psychology International*, 1(2): 21-23



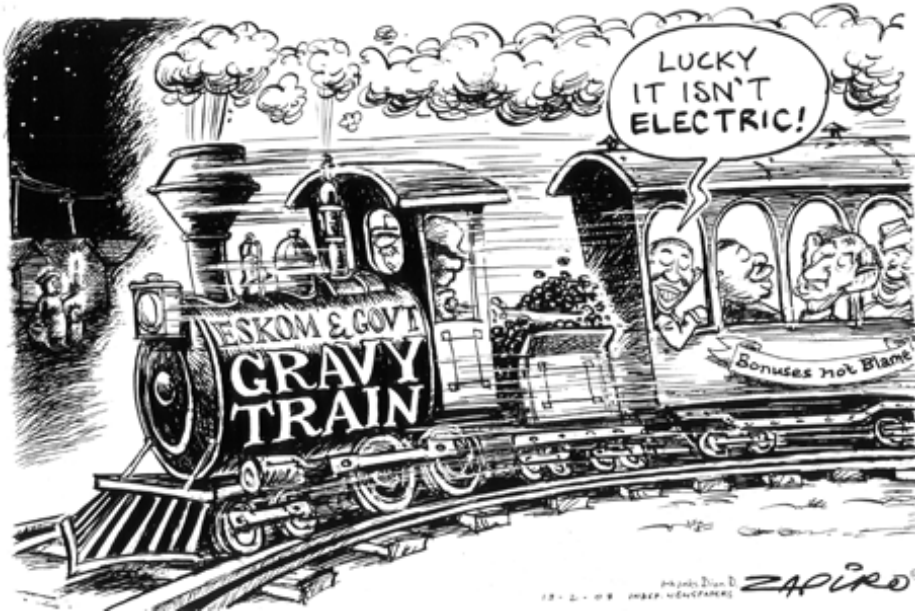
Appendix 1: "We must tighten our belts"

Source: Mail and Guardian 2008/05/10



Appendix 2: "Global Warming Conference"

Source: Zapiro, Mail and Guardian 2008/06/17



Appendix 3: "The Eskom and Govt : Gravy train affair"
Source: Zapiro, Mail and Guardian 2008/06/12 and Business Day 2008/06/12



Appendix 4: Bob, you're time's up!
Source: Zapiro, Mail and Guardian 2008/04/29