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This is a special issue of the Caribbean Teaching Scholar which deals with the perceptions of both students and lecturers about their teaching and learning experiences. The articles underscore the importance of continuously reflecting on teaching practice and learning experiences to ensure congruence of perspectives and, more importantly, to identify, where they may exist, the disconnect between the best of intentions cited in curricula and the reality of the learning experiences, as determined by students and their teachers. Thus, apart from encouraging and facilitating the reflective habit, the issue highlights the importance and value of reflections on the whole to the advancement of the teaching/learning enterprise.

In the first article Stephen Joseph, Centre for Education Programmes, University of Trinidad and Tobago, examined students’ perceptions of history to determine the conceptual paradigms that exist in their thinking about the subject. A mixed method approach was used to triangulate quantitative and qualitative data obtained from questionnaires, focus groups and interviews. Over 400 students from secondary schools in Trinidad and Tobago participated in the study which revealed a general weakness in students’ understanding of concepts such as historical evidence, causation and historical explanation. The author proffered, as a cause for these results, that history concepts were taught only incidentally, if at all, at the upper secondary level. The results therefore speak to the need to re-examine teaching approaches to include more conceptualisation within the discipline of history.

Clio’s matrix addressed by John Campbell, Faculty of Humanities and Education, The University of the West Indies, St. Augustine expanded the history discourse. In this article, however, the author reflects on the ‘what’ of history as opposed to the ‘how’ to teach history addressed in the previous article. The author provides an exposé of new trends in the history offerings at universities ostensibly to keep in step with technological advances, openly accepted by academia worldwide. His perception that while there are several positive and obvious outcomes to the trends in expanding history offerings, consideration must also be given to the downsides including issues of objectivity and use of sources within historical writing. He cautioned that the downsides escalate when the field of Digital History is examined. He theorised that it is a thinly veiled attempt to redefine what traditional historical writing is and the basis of its legitimising authority.

The focus of the third article in this issue is on perceptions of medical students of the inclusion of an epidemiology and biostatistics course in their first year programme of study. Douladel Willie, Trevor Ferguson, Marshall Tulloch-Reid and Affette McCaw-Binns, Faculty of Medical Sciences, The University of the West Indies, Mona reviewed students’ evaluations after the implementation of their
course to determine their views on their course experience. They also administered a questionnaire to obtain feedback in particular, on their views regarding course content and instructional strategies which were reviewed and summarised. The students’ reflections show that they had a strong preference for teacher-centred approaches although they were able to determine that such methods were less valuable for content that was more difficult for them to digest. Notwithstanding their preference, the students were also able to identify specific ways in which learner-centred approaches contribute to their own learning and development. The paper highlights the challenge of preparing students to engage in more learner-centred strategies which might indeed provide them with greater learning benefits.

Damian Cohall and Desiree Skeete, Faculty of Medical Sciences, The University of the West Indies, Cave Hill presented an account of the relationship between student attendance at lectures and their performance. Student performance in the Fundamentals of Disease and Treatment course before and after the implementation of an attendance policy was the subject of this paper. The policy was designed to improve attendance and consequent performance of students in a foundation course to which they exhibited a poor attitude: reflected in low attendance, and in which they traditionally registered poor performance. Selected statistical tools were used to analyse the attendance and performance data. The results showed statistically significant improvement in attendance, but a similar or comparative improvement in performance was not registered. The findings seem to support the view that factors beyond attendance may be more critical in improving student performance.

The final paper in this issue considered the perspectives of the practical learning experiences of a first year master’s level Clinical Psychology class. Stacey Brodie Walker, Faculty of Social Sciences, The University of the West Indies, Mona examined both the expectations and clinical training experiences of the students. Mainly qualitative methods were utilised in this case study. The results showed that the students’ expectations were mediated, mollified and aligned through the clinical experiences even though hands-on participation was limited.

Anna-May Edwards-Henry
Executive Editor
Differential perceptions of teachers and students about the teaching and learning of history at the upper secondary school level

Stephen Joseph

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This study sought to examine students’ and teachers’ perceptions of history to determine the different conceptual paradigms that exist in students’ thinking about history. The study employed a mixed-method research design aimed at triangulating quantitative and qualitative data obtained from questionnaires and focus group interviews. Four hundred and thirty-two participants were randomly drawn from selected secondary schools in Tobago and the east/west corridor of Trinidad. Findings of this research revealed a general weakness in student understanding of such concepts as historical evidence, causation, and historical explanation. This is largely because history concepts were taught only incidentally, if at all, at the upper secondary school level.

Key words: perceptions, teachers, students, history, secondary school

Introduction

One of the challenges of history teaching and learning in Trinidad and Tobago is that very little is done to establish a firm foundation in the primary and early secondary school years. Students generally enter into the secondary school system with little or no background in the subject (Joseph, 2011). Given this situation, many students who choose to study history for the Caribbean Secondary Education Certificate (CSEC) examination experience difficulty in understanding key concepts in history. Wineburg (2007) believes that historical thinking requires an orientation to the past: informed by disciplinary canons of evidence and rules of argument. History teaching, therefore, should assist students in mastering concepts like causality and comparison as well as the exploration of history as constructed interpretive account (Stearns, Seixas, & Wineburg, 2000; Van Sledright, 2009). Without formal teaching in the early years, students generally grapple with second-order concepts such as historical significance, primary source evidence, continuity and change, cause and consequence (Seixas, 2009). Some students also develop negative attitudes towards the subject which may contrast sharply with the way teachers view their discipline.

In studying students’ understanding of historical time, Carretero, Asensio and Pozo (1991) confirm that 15 year olds are capable of developing a sense of linear order of events although their knowledge of historical dates may not always
be accurate. A study on student perception of historical evidence reveals that at the lowest level of understanding, students view evidence as equivalent to information, with little interest in how information is acquired and interpreted (Shemilt, 1987). Further studies on historical causation reveal that although the concept of causation is somewhat complex, students are able to appreciate the idea of multiple causation of history, rather than simple cause-effect relationships (Voss, Wiley, & Kennet, 1998). These three studies confirm that adolescent students, 15 years and over, are capable of understanding and appreciating key historical concepts taught in the classroom.

In another study, Gregory (1988) investigates the impact of classroom interactions on student perception of history. To achieve this, he conducted a number of teacher and student interviews and classroom observations of U.S. high school history students. Using pre- and post-test assessments, along with quantitative and qualitative analyses, Gregory observed that no significant improvement occurred in student perceptions of history at the end of one semester of classroom interaction. His findings implied that the lecture-discussion method with teacher reliance on the textbook as the only authoritative source did not encourage improved concepts of, or perceptions about history.

Recognising the impact of student perception on the whole teaching and learning process, Hallden (1986) investigates student beliefs about what constitutes an historical explanation. He argues that in order to understand the information presented in history lessons, students must first come to terms with what the information is supposed to explain (Hallden, 1986). If students, for example, base their understanding of history mainly on the actions of individuals, then the teacher is faced with a rather difficult task of bringing such students to a level of analysing the historical event as a whole.

In support of this thesis, Hallden conducted studies with 17 year old history students in a Swedish gymnasium (upper secondary level). His primary aim was to determine the extent to which students were able to form comprehensive and coherent wholes of teaching material presented to them in selected history lessons. As a case in point, Hallden cites a lesson on the Treaty of Versailles, where students were asked to explain the principle of distrust that characterized the peace agreement of 1919. Hallden found that student explanations focused on Germany’s reaction to the terms of surrender rather than on the terms themselves. He concluded that pupils tend to seek explanations of historical events exclusively in the actions, reactions, and intentions of individuals or individual phenomena (Hallden, 1986). In the above example, the teacher expected students to focus on the terms of the Treaty of Versailles. But students’ interpretations were different. The result was a clear mismatch between what pupils and teachers regarded as acceptable historical explanations.

Probing deeper into students’ beliefs about what constitutes historical explanation, Hallden (1993; 1994) studied a group of high school students taking a course in Swedish history. Several major factors were presented as viable reasons for Sweden’s democracy. These included industrialisation; the emergence
of different political parties; universal suffrage, and the development of the parliamentary system of government. After observing their various responses during the lessons, Hallden arranged an interview with students at the end of the course to assess their understanding of what was taught about Sweden's democracy. In his assessment, Hallden noted that students were unable to identify the major factors highlighted by the teacher, choosing instead to give only small fragments of information to suggest that democratisation occurred when people were suffering and wanted change (Hallden, 1993). He noted that once again, the conceptual frameworks of students and teachers differed sharply. The tendency for students to explain historical events in terms of people's actions and reactions reinforces Hallden's argument that students do not have the necessary conceptual framework to provide an acceptable historical explanation. Hallden suggests, therefore, that since the conceptual framework of students and teachers often differ, some type of conceptual change is needed for students to understand history appropriately.

Whether consciously or unconsciously, all teachers bring to the classroom their own philosophy of teaching and learning. Students also bring to the classroom certain expectations about the roles of teachers and students in the teaching and learning process. Very often there appears to be a gap in what teachers and students expect of each other in the classroom. For example, many teachers expect students to view history as a discipline that requires particular analytical skills, while some students view history simply as a series of facts and dates (Daniels, 1981; Marwick, 2001; Yilmaz, 2008).

Kegan (in Baxter Magolda, 2000) explains that a critical factor in the learning process is not what students think, but rather how they think. He argues that students who believe that knowledge is certain and held by authorities, ask those in authority for the truth. But those who believe that knowledge is relative to a context and acquired through inquiry, look to teachers to guide them in that inquiry process. This means, therefore, that student learning is largely dependent upon how they make sense of knowledge.

**Purpose of this study**

The purpose of this study was to explore students’ and teachers’ perceptions of history and to present results of the different conceptual paradigms that exist in students’ thinking about history. Another dimension of the study was to determine teachers' perceptions of history and their perceptions about students' understanding of concepts such as historical evidence, causation, and historical explanation. Two research questions served to focus this investigation:

1. What are students’ perceptions of historical evidence, causation, and historical explanation?

2. What are teachers’ perceptions of student understanding of historical evidence, causation, and historical explanation?
Methodology

This study employed a mixed-method research design aimed at triangulating quantitative and qualitative data obtained from questionnaires and focus group interviews. A two-stage sampling process was used with a sample frame obtained from the Planning Division of the Ministry of Education of Trinidad and Tobago. In the first stage, a cluster random sample was drawn from a list of 53 secondary schools located in Tobago and the east/west corridor of Trinidad. These schools were divided into three distinct groups:

1. Government secondary schools
2. Government-assisted secondary schools
3. Private secondary schools

A computer-generated series of random numbers was used to locate three to five schools within each group. History students and teachers of the fifth and sixth forms were used as participants. The sample size was 432, out of a target population of approximately 1,500 students and teachers.

In the second stage of the sampling process, a purposive sample was drawn to participate in focus group discussions. There were six homogeneous focus groups comprising six persons per student group and five participants in the teacher focus group. The first three groups comprised Form 5 students; two more groups were made up of Form 6 students; and the sixth group comprised history teachers of both Form 5 and Form 6 classes. The sample size for the focus group discussions was 35 participants.

Academic qualifications for teachers ranged from bachelor’s degrees to master’s degrees in History. Some teachers also acquired professional training in teaching. Other qualifications included Advanced Level Certificate (as the highest qualification obtained) and a Bachelor of Education degree. One private secondary school teacher was pursuing a degree in Law. Ten teachers out of a total of 17 held bachelor’s degrees in History.

Table 1. Years of teaching experience

<table>
<thead>
<tr>
<th>Years of teaching</th>
<th>No. of teachers</th>
</tr>
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<tbody>
<tr>
<td>0-4</td>
<td>8</td>
</tr>
<tr>
<td>5-10</td>
<td>3</td>
</tr>
<tr>
<td>11-15</td>
<td>0</td>
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<tr>
<td>16-20</td>
<td>2</td>
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<tr>
<td>21-30</td>
<td>0</td>
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<tr>
<td>30+</td>
<td>1</td>
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</table>
Based on the distribution of years of teaching experience (Table 1), it is noteworthy that 11 of the participants were relatively new teachers with less than five years’ teaching experience. It is also noteworthy that seven of these participants did not possess any professional teacher training qualifications. The significance of these factors is beyond the scope of this study but there are clearly questions to be asked regarding these facts in relation to the research findings.

Data analysis

Quantitative data analysis for this study was done with the aid of the Statistical Package for the Social Sciences (SPSS) software. Using the SPSS software, variables from the survey were put in the correct form and checks were made for missing values. The student data were grouped according to forms (Fifth Form, Lower Sixth Form, Upper Sixth Form) to assist in easy analysis of student perception of the teaching and learning of history.

Qualitative data analysis was done without the aid of a software program. All focus group sessions were taped and information from the audio cassettes was reviewed several times to obtain verbatim accounts of focus group interviews. All redundant or overlapping statements were removed, leaving only those points that were pertinent to the study. These points were later summarised and presented as data for the research. Some verbatim accounts were presented also as findings. Qualitative data were used to inquire into student understandings of history concepts such as historical evidence, causation, and historical explanation. Qualitative data also served to confirm or highlight contradictions in the survey findings as well as to clarify certain unclear elements of the survey. The following techniques were used to ensure credibility or validity of the focus group process:

1. Verbatim accounts of focus group interviews
2. Use of audio cassettes for recording data
3. Participant review of researcher’s synthesis of interviews

I employed all of the above measures in an attempt to strengthen validity. Care was taken to capture verbatim accounts of respondents in order to avoid misrepresentation of the data. At the end of each focus group session, I gave a brief summary of the major issues discussed to allow respondents a final opportunity to add or clarify aspects of the account. The extent to which interpretations and concepts have mutual meanings between participants and researcher is the extent to which validity is achieved in qualitative research.

In order to achieve consistency, I engaged in a series of self-monitoring and self-questioning exercises. Some of these involved multiple listening as well as multiple transcriptions of audiotapes used in focus groups. To avoid analytical errors, I gave an oral summary after each section of the discussion. I then asked whether or not the summary represented the collective views of the group. In one
case where the summary was challenged, I obtained clarification on key issues before restating the summary for group consensus.

Summary of student and teacher focus group findings

The students’ perspective

Five student focus group sessions were conducted to probe deeper into students’ perception of key concepts in history. These sessions also provided greater insights into participants’ ability to master the kind of conceptual reasoning needed to provide acceptable historical explanations. Findings on students’ understanding of history concepts were also discussed in an earlier study (Joseph, 2011). Student focus group questions were as follows:

- What in your view is a history concept?
- How does one know that “historical facts” are really true?
- What causes an event to happen in history?
- Who or what determines the course of history?
- How does a historian use historical evidence?

Findings from the first question in this category revealed that students had varying views on what a history concept was. Not only were these views varied but, for the most part, they were also inaccurate. For example, student “A” understands a history concept as “distinguishable events or persons.” Student “B” has a similar view of a history concept as “these important terms or remarkable events that took place in our history.” Only three out of 30 students demonstrated some degree of understanding of what a historical concept was. Two of these three responses came from Advanced Level students; the other response came from a student of the Fifth Form focus group. One such response was that “a history concept is a mix of historical ideas of what influenced contemporary society.” Another respondent puts it this way: “a history concept is a matter of ideas being formulated about a particular event – the time period it took place, and the impact of this event on society, economy and politics.” The majority of students could not readily identify one single concept that they had learned in history class. The majority of participants believed that human beings were the primary determinants of history. Some were willing to consider other factors such as man-made events and supernatural forces as possible suggestions, but only after much probing by the moderator.

Findings also revealed that the majority of students gave single-factor explanations for events in history. For example, when asked to explain what causes an event to happen, students gave responses like: “people cause events to happen,” or “a particular disturbance causes an event to happen... like the attempted 1990 coup.” The data indicate that students generally believed that an event was caused by one particular factor rather than by a mix of different factors. Even after probing, only a few students were willing to consider multiple causation as a viable explanation for the occurrence of an historical event.
This contrasts sharply with responses from the survey questionnaires which suggested that students generally understood the concept of multiple causation in history. Focus group discussions revealed, however, that while students were able to identify appropriate responses on the survey, they were unable to adequately defend their positions with any adequacy in the focus group setting.

Students were more confident, however, about their perception of historical facts. Many respondents hesitated to state categorically that historical facts were really true. Instead, they adopted a somewhat postmodern, deconstructionist approach, questioning the validity of certain historical sources. Deconstructionists generally challenge what they consider as the old modernist principles of historical truth and methodological objectivity (Munslow, 2001). In response to the question about the truthfulness of “historical facts,” one student stated: “I will not limit myself to any one way of thinking. I prefer to look at different interpretations rather than hold on to one way of thinking”.

The final question in this category dealt with the historian’s use of historical evidence. An analysis of students’ responses revealed that students generally regarded the historian as a detective using a number of clues to solve a mystery. Respondents were also aware of some of the limitations historians faced in trying to reconstruct the past. Still, students believed that notwithstanding the possibility of bias, historians were expected to carefully assess historical evidence before presenting any account of the past. One student volunteered to summarise the discussion in this way: “History is a mystery story to be pieced together. The historian searches for clues and puts them together to determine the most logical explanation of a particular event. But there is also need to consider other alternatives that may also be plausible.”

The teachers’ perspective

The teacher focus group comprised five history teachers from three different school groups, namely, Government Secondary, Senior Secondary, and Private Secondary Schools. All of the teachers had a bachelor’s degree in History, with two teachers possessing additional professional qualifications in teacher education. Of the five teachers, two had less than three years teaching experience; three teachers had between 5-10 years experience; and one teacher had over 30 years experience in teaching. Three teachers taught both Fifth and Sixth Form classes, while two taught only at the Fifth Form level. Four of the participants taught in secondary schools in Trinidad, and one teacher taught in a Senior Secondary School in Tobago. Teacher focus group questions were as follows:

- What is your understanding of a history concept?
- What historical concepts do you find appropriate to teach at the Fifth/Sixth Form level?
- Which concepts do you find most difficult to teach? Explain.
• What is your approach to teaching concepts such as causation, historical evidence, and historical explanation?
• How do you know that your students understand historical concepts taught in the classroom?

The first question required respondents to jot down on a piece of paper their understanding of a history concept. The following responses were given:

**Teacher A:** A history concept is a viewpoint that has been generalized so as to explain an occurrence, event, or happening.

**Teacher B:** A history concept is an over-riding theme that is used as a guide or springboard to teach individual lessons.

**Teacher C:** Indentureship is an example of a history concept that describes a situation in which one group of persons works under the control of another group for a period of time.

**Teacher D:** A history concept is the formulation of a set idea or theme upon which a teacher bases a presentation. Such a concept must be made as clear as possible so that the student is able to properly grasp the idea being taught.

**Teacher E:** A history concept is used to engage students in some aspect of theory as it relates to the past, and as it bears upon themes.

When asked to explain their various approaches to teaching concepts in history, the majority of participants admitted that they did not really set out to teach concepts, rather, they taught facts presented in the history texts. They confessed that if concepts were taught at all, they were taught incidentally. One teacher explained that a method of teaching concepts would be to link a modern day situation to the past. Another teacher maintained that knowledge acquisition was an important pre-requisite to understanding concepts. She stated that students could not engage in analysis because they did not know the facts.

Extending the point a bit further, one participant admitted that she did not leave it up to students to analyse historical information because she felt that they were incapable of doing so. Holding firmly to her teacher-centred approach, the teacher insisted that she determined how students should analyse history. It is important to note, however, that this was not the general view of the group.

Question 3 in this category asked teachers to explain which concepts they found most difficult to teach. Having already admitted that history concepts were taught incidentally, this question did not seem pertinent at this stage. Still, the moderator persisted to ask about the question of historical evidence. Participants agreed that teaching students to use historical evidence was a rather difficult
exercise. They believed that since students generally did not read widely from different sources, they experienced difficulty in making syntheses.

Asked what teachers could do to assist students in acquiring the skills of analysing historical evidence, participants gave the following suggestions:

- Conduct interviews with senior citizens who were involved in historical events such as World War II and the Black Power Movement.
- Allow students to visit the museum and national archives to interact with authentic historical evidence.
- Take students on a historical walk around the community.

Participants believed that these activities would go a long way in helping students to understand historical evidence.

Although respondents felt that concepts such as black enslavement, class consciousness, and freedom were important concepts to teach in Caribbean history, they could not say for certain whether students fully understood these concepts taught in the classroom. In reflection, all the participants agreed that teachers should make a more conscious effort to teach historical concepts before students could begin to understand the meaning of concepts in history.

**Findings of research questions**

*Student responses to research question 1: What are students’ perceptions of historical evidence, causation, and historical explanation?*

Survey item 1 asked students to respond to the assertion that historical evidence should be questioned. The majority of students (309) indicated that they agreed with the statement, and a small number (52) disagreed. The remainder of respondents had no opinion on the matter.

Survey item 2 probed deeper into the question of historical understanding and asked participants to respond to whether they believed that human beings determined the course of history. Again, the majority of participants (316) responded in the affirmative while 43 of the respondents disagreed.

Survey item 3 asked whether historical events were caused by a complex mix of different factors. 346 of the respondents agreed with the notion of multiple causation in history as opposed to a small number (26) who disagreed.

Survey item 4 inquired into the question of historical inevitability. The question asked whether all historical events were inevitable. Respondents seemed divided on this issue as evidenced by the 117 who agreed, 186 who disagreed, and 129 who could neither agree nor disagree with the statement.

Survey item 5 probed into the students' understanding of continuity and change. The question asked whether history involved the study of change over time. The majority of respondents (357) agreed with the statement, while 24 expressed disagreement.
Based on the findings of students’ responses to research question 1, it appears that students generally demonstrated understanding of historical concepts such as historical evidence and causation. This is noteworthy because upon further probing in focus group settings, students displayed a general lack of clear understanding of these concepts.

*Teacher responses to research question 2: What are teachers’ perceptions of student understanding of historical evidence, causation, and historical explanation?*

Respondents were asked to indicate on a 5-point Likert-type scale whether their students understood the concept of continuity and change. The majority of teachers (10) reported that students understood the concept of continuity and change. However, five of the teachers disagreed with this view, while two could not be certain whether in fact students understood this concept.

Survey item 1 asked whether students understood the concept of historical evidence. Again, the majority of respondents (11) indicated that their students understood the concept, while four out of 17 teachers disagreed. Two respondents could not be sure whether their students really understood the concept.

Teacher survey items 2 and 3 were intentionally set to correspond with student survey items (also 2 and 3) to determine the extent to which both teachers and students shared similar views.

Survey item 2 asked whether participants believed that human beings determined the course of history. The majority of teachers (13) agreed with this statement, while only two of the respondents disagreed. This compares favourably with the views expressed by students on the question.

Survey item 3 asked whether historical events were caused by a complex mix of different factors. All the teachers agreed with the concept of multiple causation as compared to 80% of students who also shared similar views.

Based on the analysis of teachers’ responses to research question 2, it could be assumed that teachers generally believe that students understand such concepts as continuity and change, and historical evidence. Both teachers and students also held similar views on the concept of multiple causation.

*Analysis and discussion of research questions/findings*

*Research question 1: What are students’ perceptions of historical evidence, causation, and historical explanation?*

Based on student survey responses to this question, one can reasonably assume that students understand concepts such as historical evidence, causation, historical explanation, and continuity and change. But the focus group discussions do not support this assumption. The majority of students in these discussions demonstrated a lack of clear understanding of what a history concept is. While the majority naïvely regarded history concepts as events of the past, only three out of 30 respondents were able to identify historical concepts as ideas formulated about
past events. This finding reveals the need for greater emphasis to be placed on the teaching of history concepts in secondary schools.

Findings of the focus group discussions also contradict survey responses to the question of causation. While students demonstrated understanding of multiple causation on the survey questionnaire, during the focus group discussions they continued to offer single-factor explanations for events in history. Based on responses, it appears that students believe that an event is caused by one single factor, rather than by a mix of different factors. After much probing, only a few students were willing to consider multiple causation as a viable explanation for the occurrence of an historical event.

Given this lack of corroboration, one can reasonably conclude that the wording of the survey questions made it easy for students to select an appropriate response. But when placed under closer scrutiny in a focus group setting, these students were unable to adequately account for their perceived knowledge of multiple causation in history. In this regard, the focus group interviews served as an effective mechanism for cross-referencing student knowledge of information recorded on the survey questionnaire.

Focus group discussions also confirmed what students regard as an historical explanation for events of the past. Holding fast to their popular survey response that human beings determine the course of history, students generally failed to consider other possible factors such as social and political events, technology, or even supernatural forces, as other possible explanations for events of the past. This suggests a lack of clear understanding on the part of students of what constitutes an historical explanation. But given the complexity of this particular historical concept, one needs to be sympathetic to students who are generally not taught history concepts at the secondary school level.

Focus group discussions corroborated survey findings on students’ perceptions of historical evidence. Generally speaking, students believe that historical evidence should be questioned, and that the historian, like a detective, uses a number of clues to unlock the mystery of the past. Students also demonstrated understanding of some of the limitations that historians face in attempting to reconstruct the past.

Research question 2: What are teachers’ perceptions of student understanding of historical evidence, causation, and historical explanation?

Based on teachers’ survey responses to research question 2, it could also be assumed that teachers generally believe that students understand concepts such as continuity and change, and historical evidence. Both teachers and students also hold similar views on student understanding of the concept of multiple causation.

Findings of the teacher focus group discussions reveal that while teachers believe that students understand certain historical concepts, there is no definitive way of testing this assumption since teachers do not teach concepts as part of their regular history instruction. The majority of teachers in the focus group confess that
history concepts are taught only incidentally, if they are taught at all. Given this situation, one could reasonably assume that students' apparent understanding of certain historical concepts could be attributed to common sense deductions based on incidental teaching of history concepts.

If, in reality, students do not readily understand historical concepts, one can further assume that this situation is exacerbated by the lack of exposure to concept identification and concept teaching in the classroom. The assumption can also be made that unless teachers make a conscious effort to identify and teach concepts in history, students will continue to experience difficulty coming to terms with complex concepts such as causation and historical explanation.

This apparent difficulty of students to grapple with historical concepts seems consistent with Hallden's (1986) findings on students' historical understanding. After conducting two studies on students at the upper secondary level, Hallden concluded that the tendency for students to explain historical events in terms of people's actions and reactions suggests that students at this level do not have the necessary conceptual framework to provide an acceptable historical explanation. This conclusion resonates with this present study on students' ability to understand history concepts.

**Conclusion**

This study explored students' and teachers' perceptions of history to determine the extent to which different conceptual paradigms existed in students' thinking about history. Findings of this research reveal a general weakness in student understanding of such concepts as historical evidence, causation, and historical explanation. However, teachers believe that their students understand these concepts. But there is no definitive way of testing this assumption since teachers in the focus group confess that history concepts are taught only incidentally, if they are taught at all. To avoid conceptual gaps in students' understanding of history, teachers should make every effort to deliberately teach history concepts at an early level if students are to apply these concepts at the upper secondary school level. It is, therefore, the responsibility of teachers to provide students with the best possible learning experiences and go beyond merely preparing them to pass examinations. Such learning experiences should provide students with the necessary conceptual frameworks not only to understand history, but also to appreciate the value and relevance of history to everyday life.
References


Clio’s Matrix: Reflecting on Digital History at The University of the West Indies, St Augustine

John F. Campbell

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The introduction of Digital History courses to the teaching lists of universities worldwide had been hailed by many historians as a positive step forward. This positive endorsement came as academia realised that these courses demonstrated the various universities’ commitment towards expanding their historical offerings in step with the advancements taking place in technology. These courses demonstrated also the willingness and ability of the faculty members so involved to adopt and to teach new technologies and methodologies that today, inevitably, affect the discipline. However whilst the benefits of these courses may at first seem self-evident there are also many less visible, but nevertheless problematic, downsides to the adoption of digital technology into this traditional academic discipline. More specifically these downsides centre on the objectivity issues concerned with the presentation and the use of the sources within historical writing. The perceived downsides increase when one recognises that the field of Digital History itself is ultimately an attempt to redefine what traditional historical writing is and the basis of its legitimising authority.

Key words: digital, technology, history, objectivity

The case for Digital History

The proposal for the first Digital History course at The University of the West Indies (UWI), St Augustine, Trinidad & Tobago submitted in the winter semester of 2011, was intended to attract a wide cross section of students from across the humanities and social sciences who were interested in understanding the use of technology within this traditional academic discipline. Indeed, technological growth within the Caribbean region and its application within many other disciplines today made the need for this offering of Digital History in the History department seem self-evident (Barry, 2002). Surprisingly, the discipline of history is today, in fact, now playing technological “catch up” with other disciplines that have utilised technology and its opportunities for non-linear methodology to view and solve problems. The position of coming from behind is surprising because the earliest idea for nonlinear expression of research was originally envisioned for the history discipline as early as 1945! (Ayers, 1999).

Digital History is a relatively new area of academic endeavour that first emerged in 1993 (Page, 2007). It involves on the one hand the digitisation of source
materials into online reference materials to form repositories for use by information seekers at all levels. On the other hand Digital History is a complex set of technical skills used to codify historical sources using contemporary technologies. These two aspects come together to present the historian’s research often as a non-linear digitised representation of thoughts. This is usually presented through the use of web pages, digital archives or other software interfaces.

Many Caribbean educators argue that the proper use of digital technology within their courses could improve learning (Evans, 2007; Kuboni, 2009). They argue that with proper safeguards being given to teachers concerning the right type of technology to use; the warnings given in respect to differently abled, gendered and capable learners, and the respect given to the peer to peer experiences in learning and on-going teacher education, the use of technology and the emergence of the digital age can really only be a blessing for those in the teaching and learning community.

For Caribbean historians the Digital History option will be helpful, as it will give a much-needed boost in the arm for Caribbean Historical representation. In this context both primary and secondary sources will be made more easily accessible to a wider online audience. To this end there will be an increase in online publications of Caribbean topics and knowledge repositories about the Caribbean both regionally and internationally. There will also be the creation of new historical sources and the accompanying representations of them. Ultimately the historical material in many cases would ‘come alive’ through electronic presentations and the storage of historical data in audio-visual modes. All these improvements will positively impact upon the student and consuming public.

Positive also will be the new skills learnt by the budding historian. A glance at the course outline for the Digital History Course at UWI revealed that the new historian must appreciate the importance of issues like “digital technology on historical studies, blog entries, Digital preservation of sources”, and skills like “web design and construction, historical communication via the Internet and assessing academic blogs” to name but a few of the course requirements. These skills were never imagined as part of the Caribbean historian’s original arsenal of tools/skills even a decade ago. When learnt and practiced by the Digital History student today these new skills will undoubtedly benefit their learning not only in history but also across the disciplines.

Not only at the tertiary level will benefits accrue, but at the secondary level as well the digital influence provides benefits. Indeed the move by the UWI into Digital History had been foreshadowed by the regional examination board (Caribbean Examinations Council, CXC) that had already encouraged the use of History and Caribbean Studies web sites and related social media technologies for its students. They had done so with the expectation that not only would there be use made of the new digital technologies but also that the new format would make history more lively and enjoyable to a wider sector of the population especially those of school age. With the introduction of a Digital History course at the UWI this process was enhanced and validated by a key regionally based tertiary stakeholder.
Indeed the move by the UWI into this area may mark perhaps its ascent into a position of regulation for the downstream sites of knowledge that have sprung up and which cater to the needs of the various students.

The attractiveness of Digital History had been encouraged also by the rise of social media. Webfoot Research (a leading provider of Internet security services for consumers and businesses worldwide) estimated that about 75% of Millennials (people between the ages of 18 and 34) felt addicted to social networking especially on their mobiles. In this context the custodians of traditional teaching had taken note of (and consciously joined) this new popular medium in their quest for reaching learners where they are most comfortable and indeed, most present (Campbell, 2011). Digital History by making use of much of the social computing networks and tools has widened the teaching forum, methodologies and appeal beyond the classroom.

Additionally the leaps and bounds made by hardware manufacturers today have provided tools like printers, computers and storage media which, when properly connected, give almost unlimited access to and means of dissemination for a wide range of knowledge. These hardware improvements and social inter-connectivity options have given rise within the education community to sleek software interfaces and their related Learning Content Management Systems (LCMS). These items, not surprisingly, have developed a justifiably solid foundation within academia that has guaranteed their further growth. Indeed the day of the virtual classroom and its related learning methodologies is definitely here with us.

In general therefore Digital History allows ease of use, and enhanced storage and presentation options. All these add up to make the historical experience a more enjoyable one through the use of academic software and social media. Digital History through feedback and interactive portals also allows forums for historians to collaborate and share information amongst themselves and with the wider public.

However, a word of caution! As the old adage goes 'All that glitters is not gold' so we must now re-assess our glittering digitally enhanced educational edifices and discern what may lie below the gleam. While accepting that with due diligence many of the downsides to the use of technology may be avoided, this paper, ironically, focuses on the problems that may be caused when better practice is pursued. In this example the creation of Digital History, while providing an egalitarian base that allows almost limitless access and presentations opportunities of historical sources, also creates some new and recurring issues about the pivotal point of how history is done (epistemology) and the very nature of historical objectivity itself (ontology).

The 'Matrix'/problem defined
The new issues that arise with the use of technology within Digital History, in the first instance, revolve around the Internet as both an information source and a publication outlet. With the use of the Internet as the primary medium for
dissemination of historical information within Digital History, there is now an increase in the number and calibre of people who get published. This poses a big problem within a discipline that sets much store by its established canons and by the “professional” historians who, over time, have established these cannons and, through their iconic printed publications, had controlled the nature of the voice of legitimacy.

The Internet, by offering an egalitarian approach to ‘who gets published’, makes everyone a publishing historian. Many established historians caution against this digital aid that allows numerous varying (and sometimes misleading) accounts, to have as much significance as those accounts of the historical ‘heavyweights’. However, others have argued that there is a definite and positive role for alternate accounts and interpretations on any historical matter (White, 1983). As such, in a dialectical context, it is necessary for all accounts to see the light of day. As all accounts, even by their errors, offer opportunities for growth. In this sense, as the Formalist school might argue, the alternate interpretations all allow a clearer assessment of the ultimate truth.

This very reasoning had, in the past, served the Caribbean well in its own struggle to gain historical ascendency. In this context one notes the dominance of Imperial History and its metropolitan scholars who controlled Caribbean expression right through to the 20th century. It was only through small, independent studies done by locals like J.J. Thomas (Thomas, 1969) who questioned the dominance of the imperial voice and its right to pronounce on Caribbean peoples, that a small niche was carved out and won for ‘post-colonial’ and ‘subaltern’ studies. Thanks to the ideas and new methodologies of these single independent thinkers, today the Caribbean has its own historiography and legitimacy.

The point here then is that it would not be in the best interest of the historical discipline to shut down these new ‘digital historians’ who may be unknown or not affiliated with known publication houses or universities. In fact the Internet now offers a unique chance for perhaps an increase in the speed of the historical dialectic as new ‘historians’ emerge. Perhaps the strongest critique of Digital History comes in the area of its methodological implications. More specifically the critiques that focus on the fundamental building block of history - the text.

The text forms the basis of the historical evidence and issues of interpretation surrounding its exposition have always existed. These issues revolved traditionally around the meaning of the text. The main challenges to the text faced by the historians being lumped under the title, the “New Historicism” (Brannigan, 1998, p. 6; Hamilton, 1996, p. 107). The New Historicism focuses, at root, on meaning creation. This had already been a contentious area even before the advent of the Digital aspect. The problem arose when historians focused on how issues of the text, textuality and context, combined to create meaning. Following the linguistic turn, and using the insights of cultural historians like Jonathan Culler, the very text that the historian used (which initially seemed so definite) were pronounced to be nothing more than “…linguistic codes that constitute social and discursive
formations” and which allow the real to be “as imagined as the imaginary” (Jenkins, 1995, p. 3).

The point here is that textual representation itself had already been made (before the advent of Digital History) into a contested area of interpretation in which historians argued over the primacy of any one ‘correct’ interpretation (Spiegel, 1997). The New Historicism which developed in the late 20th century threatened the very core of the discipline as it attempted to treat much of history’s text like literature to be discreetly critiqued and its meanings to be derived thereafter (Hamilton, 1996). Not surprisingly therefore many traditional historians hated it (Lothe, 2000).

Traditionally historians loved to create a straight narrative with the text which, though it may contain a few twists and turns, said something definite at the end. Indeed in an often-quoted line the famed Victorian historian James Anthony Froud described the selectivity and bias inherent in the historian’s desire for a ‘straight’ story in the following way:

It often seems to me as if history is like a child’s box of letters, with which we can spell any word we please. We have only to pick out such letters as we want, arrange them as we like, and say nothing about those which do not suit our purpose.

(Froud in Lothe, 2000, p.vii)

It seems then that much traditional history writing, like science, craved finite conclusions. It relied on text that usually gave the historical story a definite and finite end and slant. Digital History shattered this idea. Its use of multi-layered expository narratives that presented many layered options and no one fixed meaning through a hypertexted methodology, offered for the first time, the ability to cleanly create non-finite history writing.

By so doing the typical history essay was changed. Hypertextivity challenged the linear format and ‘text’ of a good essay (Ayers, 1999; Thomas, 2007). Issues like coherence and interpretation were now definitely reinterpreted as the good Digital History essay had new criteria for relevance. Essays now included hyperlinks, graphical representations and other layout schemes that constituted ‘good’ Digital History text. Challenged also was the basic historical ‘essay’ which no longer conforms to the conventions of the print media but rather relies on digital textual definitions for relevance. Indeed there now has to be new ways to ‘read’ the text of Digital History.

The Digital History article for example, not only consist of traditional text but, as a matter of course, also contains digitised objects such as paintings, photographs, audio (speeches, songs, narration), flash animations and Quick Time® movies - which will now also constitute ‘text’. With these inclusions the historian is further challenged to rethink the idea of ‘text’ in Digital History. The inclusion of Digital History to the Course Offerings at UWI, St Augustine will raise
again in a local context the intricate problem of historical interpretation/expression and the basis of ‘text’.

Another critique of Digital History which emerges as one reflects on its implementation at UWI concerns the authenticity of the sources themselves. Perhaps an example using photos may best illustrate this issue. Getting tones right and proper colour management in published photographs is as much a part of good Digital History presentation as is getting your subject/verb agreement right is in traditional text. Indeed oftentimes the original picture source may be difficult for the researcher to access or it may be damaged and the use of a scanner would allow a copy to be made. This copy subsequently has to be edited and the skill of the practitioner determines how good the picture will ultimately look. Whether for aesthetic value or for practical viewing reasons some slight adjustments may be necessary or even preferred. The easy and seamless ways in which software programs can achieve fantastic results, allow a much better digital presentation but, inadvertently, allow a tampered primary source.

For example issues of racial preferences can affect the final allocated skin tone of a digital picture. Facial enhancements can add or remove blemishes from a face. ‘Too much’ or ‘too little’ of a subject’s nose or lips for example, can easily be fixed to create better aesthetics for the reproducer. Some questions emerge here. At what point does the subjectivity of the Digital Historian affect their role as a neutral conduit through which the source is brought to the present and to the viewer? Does the Digital Historian, by refining the subjects of history, actually create history? As film critics have often argued, when considering pictorial representation, that the production “…like verbal prose, has a sender…[and] no matter how different they are, it is useful to differentiate the concept of sender (implied) author and narrator” (Lothe, 2000, p. 29). What this means is that a dilemma occurs for the Digital Historian between what counts as objective representation of the subject and what counts as ‘aesthetic’ falsification of same.

Similarly, pictures of geographical sites and locations can also be ‘enhanced’ depending on the purpose of the digital author. While the deliberate manipulation and falsification of historical data may be easily identified, the unintended/subtle yet telling changes made due to well-meaning enhancements now also need to be taken into account: since they now form a part of the historical account. In this sense the issue is to what extent can a source be enhanced or digitised and still remain ‘authentic’? At what point does an ‘enhanced’ picture become a false source? The problem increases as, over time, the original authors of these sources may become absent and can no longer point out their edited inputs.

A third and perhaps final reflective critique of Digital History is its acceptance or not into mainstream academia. There was some scepticism by conservative historians about the new learning technologies and their being detrimental to higher learning (Noble, 1997). This scepticism was fuelled by a belief that the electronic revolution would destroy the legitimate cannons of traditional learning. It would do this by replacing the tried and trusted ‘pen and paper’ techniques of historical investigation and allow instead a watered down electronic methodology
in which the Internet would give primacy of importance to all created documents and sources. As the Marxist historian of technology David Noble ruefully stated over this projected watering down of the standards of traditional scholarship “…in future years we will look upon the wired remains of our once great democratic higher education system and wonder how we let it happen” (Noble, 1997: online).

In spite of these gloomy predictions the technological revolution continues and today our electronic libraries and computerised courses stand not weakened but in fact strengthened by the surplus of resources that they now access and give access to as a result of the digital revolution. The reason for their continuation is simple. Whilst a positivist approach has long since been abandoned by most historians, the still oftentimes heavy reliance on primary sources, interviews and ‘immersing oneself in the period under study’ gives the student a positivist leaning within a discipline that has largely undergone a postmodernist turn. As such the need for streams of data remains. The digital format provides a voluminous context for the production and retrieval of loads of information.

Digital History production is an activity that encompasses more than just the provision of a think piece or entertaining multimedia show created for consumers. It is instead legitimate scholarship that will influence opinion. So why then is it trivialised even within History Departments that allow such courses to be created? The answer lies perhaps in the fact that what has changed is that the digital age has threatened to alter the face of power relations within the historical profession itself. This is a frightening threat for many already established historians.

With open access to publication and the ear of the masses the power once wielded by a select few scholars has now become available to the many. Indeed the need to learn new and sometimes complex skills within the digital arsenal acts as a new barrier to exclude, ironically, the traditional holders of power. As such there is often a reactionary cry against the use of Digital History. To this end the oft-voiced critique about the lack of authenticity of its sources is expressed. However one notes that Digital History, like traditional ‘pen and ink’ history, has created safeguards to protect its methodologies.

These methodologies revolve around electronic means of verifying the authenticity of original sources. To this end, for example, the critique of false electronic sources has been stymied somewhat by the use of electronic tagging of source material through the use of Digital Object Identifiers (DOI) that form unique labels for a computer readable objects found on the World Wide Web. The DOI stays with the object, even when the digital object is transferred to another owner and/or another website which avoids copies or counterfeit sources being created or used. Even further, governments, industries and individuals worldwide have instituted laws, penalties and low cost detection methods that allow easy recognition of digitally produced fakes.

Measures already suggested/instituted by companies like Hewlett-Packard for example include “…a detection scheme that uses an algorithm to separate suspicious documents from those free of suspicion by changing the position of objects an infinitesimal amount, too little to be seen by most people, but enough
so that a machine can detect it… … using differences in color,… utilizing the
Graphical Barcode which injects a ‘digital life’ into printed documents. So when
the document is to be copied, instead of producing its photographic image, the
original document is retrieved from the digital source and printed” and by utilizing
“measures to detect properties of a counterfeit to identify what kind of printer and
ink may have been used to produce it” (Beckett, online). The point here, ultimately,
is that Digital History is a serious area of study employing an ever-expanding and
legitimate set of methodology and safeguards.

The Matrix resolved
To a large extent much of Caribbean History has revolved around the region’s
plantation sugar industry past. The historical recovery of this important period
often relies on the sources created by the activities of the sugar plantations. These
sources, usually in official form as plantation and colonial records, have been
available as paper based sources. Researchers generally referenced these sources
which are freely available at repositories in the Caribbean, Africa, the Public
Record Office in England and public and private holdings wherever records have
been kept. These sources, traditionally, were accessed usually only by the specialist
who had the time (and finances) to travel to the repositories and could provide the
necessary credentials for access. With the digitisation of these sources researchers
no longer need to have the resources to leave the Caribbean or risk going to hot
spots (like those in parts of Africa) to access them. Compilations of Caribbean and
African sources for example, are now easily accessible through the Internet.

Additionally, complex historical records cataloguing transatlantic journeys
and recording the ships used; captains and tonnage of cargoes, and enslaved people
carried, are now easily available to interested students on CD Rom. However, easy
access comes at a price. The new problem is that the selection of material is now
done digitally and what is not digitised becomes less relevant. As Carr (1990)
argued the age old problem of historians and their subjective selection of sources
will always remain a problem. One can easily see then how this traditional problem
of selecting sources is transferred into the field of Digital History.

For example the digitised sources of slave trips recorded by historians like
David Eltis on CD Rom (Eltis, 2000) have become the standard reference source for
many Caribbean historians. While helpful it does limit the expansion of the debate
by pre-empting further searches. It also assumes that the methodology, figures
and estimates of the original researchers were faultless: a point that offers some
cause for concern especially in light of other statistical debates taking place in the
discipline of history. Nevertheless, easy and cheap electronic access to sources still
remains a positive development for the discipline.

Perhaps the final comment on Digital History should aptly be based upon
the words of a historical Caribbean source. In early Jamaican plantation history
Mrs Arcedeckne, a resident white female sugar planter in 1781, had commented
wryly on the dictates she received from her absentee son and his comrades in
England. Although her son was an absentee owner who owned the plantation, she was resident in Jamaica on the plantation and observed most carefully its day-to-day operation. As such she and her local resident planters felt they knew more about the needs of the estate than the absentee. What is interesting is the reference she and the local planters used for the absentee. They had dismissingly referred to the absentee’s management dictates as coming from theoretical “pen and ink” planters who were out of touch with modern sugar management “on the ground” (Vanneck Papers, 1765-1810). She held them in contempt because, unlike them, she operated in the current world of sugar management and was able to better manoeuvre amidst the pitfalls and opportunities existing there.

Perhaps now it is the turn of the traditional “pen and ink” historians to feel scared and to be threatened and marginalised as the new digitised historians “on the ground” take hold. In a way then we are in an era in which, ironically, a new historical class is set to emerge from within the mass of traditional historians. These historians have now become interested in digital technology and, armed with new tools utilising the art of digital manipulation and layout, they now threaten to shake up the historical establishment.

Regarding bringing the course offerings of the History Department into the technological age, the student of history in the Caribbean is faced with a seemingly straight win/win situation. To this end one cannot ignore the fact that today the computer and the Internet have become indispensable tools to the modern day historian. Today the keen historian who is armed with a powerful word processor, bibliographical software and who has access to the worldwide web and its related databases can create often-adequate historical narratives. While not saying these are all the tools that are necessary for the historical record, the point is that today technology has changed the way the historian does their craft and, by extension, demands a change in the way that the craft is taught.

Digital History is a methodology for doing history easier and representing it differently. It is not necessarily a more accurate way or a way that eliminates many of the traditional issues associated with historical writing. The fundamental issue of deriving truth from the sources remains and, in some cases, is actually expanded. Perhaps the biggest advantage of Digital History is that it allows the historian the freedom to realise truly multidimensional historical presentations. A yearning first raised in 1945 by Vannevar Bush and the amazing multi-level thinking and exposition historical machine he had created in his mind for historians. He had labelled it a “memex” (Ayers, 1999).
References


Teaching epidemiology and biostatistics: medical students’ views on the content and instructional strategies of an introductory course

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The inclusion of epidemiology and biostatistics in the undergraduate medical curriculum is essential in this era of evidence based health care. Despite this, teaching this topic often results in the students feeling confused and the teachers discouraged. At The University of the West Indies, Mona, Jamaica, students in the first semester of their third year are routinely asked to complete an evaluation form at the end of an introductory course in epidemiology and biostatistics. Students’ views on course content and instructional strategies for the year 2009 are presented here. The majority of students reported that the material presented was useful in helping them to interpret or carry out research in the future. They reported marked improvement in their ability to read, understand and critique the medical literature. Lectures were considered to be the most effective instructional method overall but less than one fifth of students thought biostatistics was effectively taught through that method. Students seemed to favour a teacher-centred learning environment although an appreciation for certain features of a learner-centred approach, such as participation in student-led group presentations, was evident. We conclude that a combination of instructional methods is useful to teaching epidemiology and biostatistics to medical students. It is necessary to identify the unique features of the different approaches that make them beneficial and use this information to better design teaching/learning programmes, with special consideration for the specific subject area being addressed. An enabling environment, including suitable teaching staff and infrastructure that actively engages learners using a variety of approaches, is essential to the teaching/learning process for epidemiology and biostatistics. Application of the principles taught in this course during their clinical rotations will also help to consolidate the learning experience.

Keywords: instructional strategies, medical education, epidemiology, biostatistics

Introduction

Learning is a complex process. Psychologists and researchers in education have, over time, proposed several models and theories aimed at providing explanations for how learning takes place (Cassidy, 2004). Theories in learning that have received much attention include those focusing on the existence and roles of learning styles (Cassidy, 2004; Connor, 2012; Kraemer, Rosenberg & Thompson-Schill,
The resultant models are usually multidimensional, focusing on different aspects of the individual and the learning environment, and typically culminate in categorising individuals as particular types of learners (Connor, 2012). A spin-off from an acceptance that people learn differently is to tailor instructional strategies and methods to suit individual learning styles or utilize a variety of instructional strategies and methods in the teaching process.

Instructional strategies can be classified into two main groups: teacher-centred or learner-centred. In a teacher-centred approach the focus is on the teacher who is viewed as the source of information and provides same to students with usually no interaction among the students. Learner-centred approaches tend to be more collaborative and students work together and interact with the teacher to discover and understand new information. The teaching/learning environment in the Caribbean has been described as teacher-centred but more recently there has been increasing interest in and support for learner-centred environments resulting in proposed and actual changes in the formats of educational programmes (Bernard & Cummings, 2003; Byron & Rozemeijer, 2001; Williams, 2005). The learner-centred approach has been endorsed by the American Psychological Association (APA) and 14 learner-centred psychological principles have been identified which address factors that influence learning for all learners and provide a framework within which to design or develop learner-centred environments (APA, 1993, 1997). At The University of the West Indies, Mona (UWI, Mona) support for the learner-centred approach is evident in the operations of the Instructional Development Unit (IDU) which offers “training for staff in the principles and practices of learner-centred teaching” (UWI, Mona: online).

Merrill (2000) supports the ‘content-by-strategy’ approach and suggests that instructional strategies should firstly be determined by the content to be taught and the goals of the instruction process. Learning styles and preferences can then be used to fine-tune the basic instructional strategies. Teachers might find it useful to provide instruction in a variety of methods rather than trying to determine the learning style of each student and adapting instructional strategies. Class size is an additional component that must factor in the decision for using one particular instructional strategy instead of another. Teacher-centred strategies using methods such as lectures have been noted to better suit large classes while learner-centred approaches using methods such as class discussions have been deemed better suited to small class sizes (Weston & Cranton, 1986).

Physicians are increasingly called upon to practice evidence-based health care. Evidence-based health care involves the systematic application of the best available research results (evidence) when making decisions about health care for an individual patient or an entire population. To do this, the physician is expected to be able to read and understand the findings of the latest research and apply the findings in such a way that the patient receives optimal care with available resources according to their personal wishes. In an attempt to provide an introduction to this concept early in the medical career, programmes in medical schools across the world
typically include a course in epidemiology and biostatistics at the undergraduate level.

At the core of epidemiology is studying the distribution and causes of health-related states in populations. Undergraduate epidemiology and biostatistics courses focus on explaining how evidence is gathered and summarised and also emphasise the importance of research in informing clinical and public health decision-making. Despite the importance of this subject area in medical school, studies have found that students often have negative experiences with teaching and learning epidemiology and biostatistics. Historically, students have expressed indifference (Ernster, 1979), a failure to grasp relevance, and a view of the subject as having little importance relative to subjects in clinical areas (Novick, Greene & Vogt, 1985). Instructors have their share of frustrations and report unfavourable evaluations by students amidst repeated adjustments to improve strategies for greater student interest and more favourable learning outcomes (Marantz, Burton & Steiner-Grossman, 2003). Perhaps the increasing popularity of evidence-based medicine and the proliferation of published research has had some impact on students' views over the years as in recent times they have reported agreement on the relevance of epidemiology and biostatistics to real health issues and their future roles as clinicians (Astin, Jenkins & Moore, 2002; Daher & Amin, 2010; Ocek et al. 2008).

In the United Kingdom, the General Medical Council (GMC) has stipulated that “[medical] students must have different teaching and learning opportunities that should balance teaching in large groups with small groups. They must have practical classes and opportunities for self-directed learning” (GMC, 2009, p. 51). With regard to the instructional methods used in teaching epidemiology to medical students, researchers have found that case and problem based learning approaches and methods that encourage interaction between students and lecturers receive more favourable ratings from students (Dyke, Jamrozik & Plant, 2001; Marantz, Burton & Steiner-Grossman, 2003). Approaches that allow students to work in small groups were also desired (Daher & Amin, 2010) and students reported a more enriching learning experience when these approaches are utilised (Dyke, Jamrozik & Plant, 2001). Traditional lectures have rated less favourably when compared with problem based instructional methods, though no difference in overall academic performance has been seen (Dyke, Jamrozik & Plant, 2001). Students have reported that epidemiology and biostatistics courses contain too many didactic lectures (Daher & Amin, 2010; Ocek et al. 2008) which, though interesting, are difficult to understand (Daher & Amin, 2010).

Teaching and learning epidemiology and biostatistics at UWI, Mona
As part of their training at UWI, Mona, medical students are required to take a course in epidemiology and biostatistics in the third year of their programme. The course is given at the start of the third year and aims to introduce students to the role of research in the practice of medicine; to encourage the judicious use of research
information; and to kindle an interest in knowledge creation through research. Students are expected to develop an enquiring attitude to the acquisition and use of the available evidence to inform health care delivery. An average of 170 students receive a total of 46 hours of instruction in research methods, epidemiology and biostatistics through four main instructional methods, namely: lectures, assigned readings, seminars (peer group discussions around a published research article and the issues presented therein, led by a discussion guide and with faculty as resource), and student-led group presentations on assigned topics. Students also undergo continuous assessment through ten short quizzes: one on each seminar day. At the end of the course students are expected to be able to locate current research information on a health related topic from print and electronic sources; read, analyse, interpret and critique the medical literature; discuss how references to the medical literature can be integrated into clinical decision-making; and explain the concepts and principles of the scientific method.

It has been suggested that a multi-strategy approach using different instructional methods would be beneficial to the teaching/learning of epidemiology and biostatistics (Astin, Jenkins & Moore, 2002). For example, core principles and concepts can be taught using the traditional lecture format whereas skills such as critiquing the medical literature and using evidence in clinical decision-making may be better taught through practical exercises in small groups.

Since its introduction the course has undergone several changes to reduce the number of teacher-led didactic sessions and facilitate more self-directed learning and small group discussions. Additionally, several of the content areas which were traditionally taught in public health epidemiology courses and were not immediately applicable to the clinician were removed from the teaching timetable. Increased emphasis was placed on how epidemiology could be used in clinical practice and the role that this training could have in providing evidence-based care. The statistical sections were simplified with more focus on the interpretation of the findings rather than derivation or calculation of test statistics. The module was also moved to the start of the third year - a less busy time in the medical students training course with less competition from the more demanding basic sciences such as anatomy.

Overall, instructional methods should be guided by evidence-based practice (EBP). This refers to the use of research and scientific studies as a base for determining the best practices in a field. While emphasis on EBP began in the 1990s with a focus on medical decision-making (Sackett, Richardson, Rosenberg & Haynes, 1997) it has since been applied to other professions, including education (Justice & Fey, 2004). Part of this process involves the evaluation of teaching strategies. In this paper, we evaluate the opinions of third year medical students of UWI, Mona on the usefulness of course content and various instructional strategies as well as their general comments regarding the course.
Method

Participants and procedures

On the final day of their epidemiology course, students were asked to anonymously complete a course evaluation form, designed by course instructors, to get feedback about the course in general, as well as aspects of content and instruction in particular. In 2009 a paper based evaluation form was distributed at the end of a compulsory attendance session and students were asked to complete the forms on the spot. While the number of students in attendance on that day is uncertain, it is known that 161 students were enrolled in the course. The data presented here represent the views of 64 students who returned completed evaluation forms.

The instrument

A questionnaire addressing course characteristics such as content, objectives and instructional methods was used to obtain students' opinions. Student perceptions regarding the usefulness of course content and instructional methods to meeting specifically stated outcomes were assessed using a forced-choice, 4-item scale. The options given were greatly, moderately, slightly and not at all. Students were also asked to indicate which instructional methods they considered effective/not effective. In attempting to find out students' feelings about the area of research having completed the introductory course, students were asked to select the response from the following options exciting/stimulating, challenging, boring and unsure, which most accurately described their sentiments. Finally, open ended questions were included to obtain information on any or all aspects of the course that were found particularly beneficial; recommendations for improvements of the course, and general comments.

Data analysis

For closed ended questions the proportion of students selecting each response is reported. In each instance non-response was noted so that denominators reflect the numbers of students responding to the particular item. Responses for instructional methods were analysed in two ways: separately for each subject area and combined such that an overall rating of effective was given as long the instructional method was rated effective for at least one subject area. For open ended questions, the data were analysed using content analysis.

Results

Sixty-four students from the class of 161 students returned completed evaluation forms resulting in a response rate of approximately 40%.
General course content

Regarding general principles of research and epidemiology, a majority of students (97%, n=62 and 94%, n=6 respectively) thought the material covered was moderately or greatly useful in helping to prepare them to carry out or interpret research in the future. A lower proportion (75%, n=48) felt the same was true for core statistical methods.

Four main course objectives

The majority of students felt the course helped in some way to: explain the concept and principles of the scientific method; locate current research information on a health related topic from written and electronic sources; read, analyse, interpret and critique the medical literature, and discuss how references to the medical literature can be integrated into clinical decision-making. In each case only 5% or fewer thought the course did not help at all. The area in which the greatest proportion of students reported improvement in their ability was that of explaining the principles of the scientific method: 89% (n=57) stated that their ability was either greatly or moderately improved. For each of the other areas the proportions of participants reporting great or moderate improvement in ability are: 75% (n=48) [locating current research information]; 78% (n=50) [read, analyse, interpret and critique the medical literature], and 83% (n=53) [discussing how references from the literature can be integrated into clinical decision-making].

Instructional methods

Table 1 shows the proportion and number of students rating each instructional method as effective. The proportion of students who provided a response (the item response rate) for each method is also indicated. Item response rates ranged from 62-77%. The method which the highest proportion of students reported as effective was lectures, followed by group presentations, seminars and assigned reading. Lectures in biostatistics received the least favourable rating among lectures and also among instructional methods with 18.4% (n=9) of participants deeming it effective. Lectures in the other two main subject areas were rated more favourably. Group presentations generally received favourable ratings: it is noteworthy that for epidemiology the proportion of students rating lectures as effective did not differ much from the proportion rating group presentations as effective whereas for biostatistics the proportion of students rating group presentations as effective was nearly four times greater the proportion rating the lectures as effective. Assigned reading and seminar discussions were rated as effective by 31% (n=15) and 43% (n=20) of respondents respectively.
Table 1. Proportion (and number) of students rating each instructional method as effective, with corresponding item response rate

<table>
<thead>
<tr>
<th>Instructional method and subject area, if appropriate</th>
<th>Proportion and number of students rating method as effective (% (n))</th>
<th>Item response rate (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lectures, biostatistics</td>
<td>18.4 (9)</td>
<td>77</td>
</tr>
<tr>
<td>Lectures, epidemiology</td>
<td>82.5 (33)</td>
<td>62</td>
</tr>
<tr>
<td>Lectures, research methods</td>
<td>66.7 (28)</td>
<td>66</td>
</tr>
<tr>
<td>Lectures, overall</td>
<td>86.7 (39)</td>
<td>70</td>
</tr>
<tr>
<td>Assigned reading</td>
<td>31.3 (15)</td>
<td>75</td>
</tr>
<tr>
<td>Group presentations, biostatistics</td>
<td>6.2 (30)</td>
<td>69</td>
</tr>
<tr>
<td>Group presentations, epidemiology</td>
<td>82.9 (34)</td>
<td>64</td>
</tr>
<tr>
<td>Group presentations, overall</td>
<td>86.0 (37)</td>
<td>67</td>
</tr>
<tr>
<td>Seminars</td>
<td>42.6 (20)</td>
<td>73</td>
</tr>
</tbody>
</table>

With regard to their overall perceptions on research, 37.5% of participants (n=24) indicated that, having completed the course, they would describe the area of research as challenging; 26.6% (n=17) said they are unsure about how to categorise it; 21.9% (n=14) said they think it is boring, and the remaining 10.9% (n=7) said they would describe it as exciting. Two students (3.1%) did not provide a response to this question.

*Open ended questions*

It was commonly expressed by the students that reading published research articles was beneficial. Among the benefits they cited were: the activity encouraged critical thinking; it taught them how to read, understand and interpret the literature; it increased familiarity with and understanding of terminology used, and it prepared them for the future. The group presentations, quizzes and seminars were also considered beneficial by many students.

The students expressed their recommendations for improving the course: one recurring sentiment was that quizzes should be followed by discussion with complete explanations of correct and incorrect responses. It was also thought by some that seminars should be fewer in number and have less time for student-student discussion and more time for explanation by faculty. It was further suggested that members of faculty need to be equally competent and to be in complete agreement on all issues. It was also recommended that in general, more time be spent on explaining concepts and that simpler language be used. Some also felt it is important to structure the timetable so that lectures introducing main concepts are always given before the seminar focusing on those issues. Students felt that a different approach is needed for teaching statistics; they suggested small groups in tutorial type settings and also more time.
Students felt that in general the course was well organised. Some thought that it was time consuming and that the classroom setting was not conducive to group discussions. Specific lecturers were identified and commended for their good teaching while others were identified as needing improvement.

Discussion

The response rate was lower than expected. Besides asking students to complete the evaluation forms, no other measures were used to promote participation. The data collection strategies did not include any methods to encourage participation by students who may have been absent from class on the day the evaluation forms were given. Additionally, students were asked to complete the forms on site and were not afforded the option of completing and returning forms at a later date. These factors may have influenced response rates.

While “there is no agreed upon standard for a minimum acceptable response rate” (Fowler, 2009, p. 51), the possible biases associated with non-response cannot be ignored. One major concern is that of selection bias and its potential effect on generalisability of research findings. The apprehension here is that the persons who respond may be significantly different from those who do not respond and so reports will be made about a small group of persons who may very well be atypical of the target population. Despite obtaining responses from only 40% of the target population the researchers are confident that the data are useful for understanding students’ perceptions about the course. Our confidence comes from the following three considerations:

1. A homogenous study population is less prone to bias from low response rates than a heterogeneous population. The reason for this is that with a more or less homogenous population even a small percentage of participants can resemble the wider population. We argue that the third year medical class represents a relatively homogenous population as far as it relates to general characteristics that could influence the area under study. Participating in the same medical training programme, these students are all in the first semester of their third year (pre-clinical) and performing at similar academic levels. The majority of them are in their first degree programme and have studied in Caribbean schools at the secondary level. This homogeneity provides some amount of resistance against the ill effects of low response rates, though it must still be acknowledged that individual experiences may still differ in a common setting.

2. The absence of a preponderance of extreme responses suggests that the obtained opinions do not represent ‘tail-ends’ of the distribution of responses/opinions in the population but rather the ‘middle’ where the bulk of the responses lie. Researchers always need to consider the factors that motivate persons to participate in surveys. This becomes especially
important when response rates are low. Persons who feel strongly about an issue in either direction would perhaps be more motivated to respond in a survey on that issue than persons who do not. The absence of overwhelming polarisation in the responses received suggests that even though only a few persons responded, they represent a cross section of views and not just particular extremes.

3. Research findings are in agreement with anecdotal information as the responses reported are comparable to views that were repeatedly expressed by students during interactions with faculty over the duration of the course.

Students reported a general feeling of being adequately prepared to carry out research or interpret research in the future having covered material relating to general principles of research; general principles of epidemiology, and biostatistics. This speaks to general agreement about the appropriateness of the material covered and to the activities of carrying out and interpreting research. Any objective verification of students’ level of preparedness is, however, beyond the scope of this paper.

The four main course objectives that were previously stated reflect essential skills that practitioners in this paradigm of evidence-based medicine need to possess. With the majority of respondents stating that they felt the course helped in improving their abilities in those areas, even in the absence of objective assessment of these abilities, it can be said that some measure of success was achieved. Specifically for critiquing the medical literature and discussing how references can be integrated in clinical decision-making, having at least eight out of every 10 students stating that their abilities have been improved is remarkable and encouraging. Courses in epidemiology and biostatistics report varying degrees of achievement with respect to these objectives: Daher and Amin (2010) reported that only 53% of students indicated that they had gained skills to read scientific articles at the end of a four week course in their second year of medical school. While for a course specifically structured to focus only on critical reading at a university in Pakistan, Bazmi Inam (2007) reported that 100% of students said they found the course useful for understanding research articles. They, however, expressed varying levels of comfort in appraising different sections of articles: the proportion of students strongly agreeing that they were more comfortable in conducting appraisals, having completed the course, was highest for the introduction and discussion sections (90% and 97% respectively) and lowest for the results (31%). Just over half (54%) strongly agreed that they were more comfortable appraising the methods section. For all sections, no more than 14% disagreed or strongly disagreed that they were comfortable in doing appraisals following the course. The study went further to provide an objective assessment of competence as students were given published research articles to apprise. The mean score for the group was 74.3 ± 9.1 out of a possible 100, suggesting that there was not much disparity between students’ actual and perceived competency levels.
The preference for case based learning approaches as has been observed elsewhere (Dyke, Jamrozik & Plant, 2001; Marantz, Burton & Steiner-Grossman 2003) was not readily apparent in this present study as seminars and assigned reading (which would have facilitated this approach) were rated least effective of all instructional methods. Although in response to open ended questions students stated that they found reading research articles beneficial, some still called for fewer seminars and shorter discussions among groups and more time for the facilitator to explain. This suggests that there may be an underlying preference for teacher-centred instructional strategies and some resistance to learner-centred strategies where students take greater responsibility for and play more active roles in the teaching/learning process.

Credence is given to the ‘content by strategy’ approach when the ratings for lectures and group presentations are examined closely. Although rating most effective of all methods, lectures were not similarly rated for all subject areas. The results indicate that the students were uncomfortable with the didactic approach for biostatistics and did not find it to be effective. They seemed to prefer the student-led group presentations which involved group work for preparation and then explanation of concepts to their peers. The data do not distinguish whether students found being involved in the preparatory and delivery activities to be helpful to their own learning experience or whether it was receiving tutelage from one’s peers that proved beneficial. The recommendations for biostatistics to be taught differently with specific suggestions for tutorials further reinforce the students’ limited appreciation for a didactic approach to this subject. Astin, Jenkins & Moore (2002) recommended small interactive teaching groups for the teaching of statistics and epidemiology, stating that discussion and feedback would ensure that concepts are clearly understood. It should be acknowledged that in conceptualising the seminars, the desire was to create a setting for discussion of epidemiological and statistical components of a published research article as well as to evaluate the evidence. For students, on the one hand, to rate seminars as ineffective and request that their numbers be reduced and then on the other hand to request tutorial type settings seems contradictory. This raises the question of whether the effectiveness of the seminars was lost in their execution rather than in their concept. Students indicated in responses to open ended questions that the classroom setting was not conducive to several small group discussions and that faculty did not appear to agree on all issues or to be of equal competence. This is supported by Astin, Jenkins and Moore (2002) who reported that while small teaching groups are useful there are usually difficulties and limitations to implementing these approaches including the shortage of capable faculty and available classroom space.

**Conclusion**

Third year medical students at The University of the West Indies, Mona generally reported that the introductory course in epidemiology and biostatistics is useful in helping them to interpret the medical literature and to carry out research in the
future. Students seem to have a preference for a teacher-centred learning approach but appreciate interactive sessions and group work. Students’ perceptions of the effectiveness of instructional methods vary depending on the specific subject area. One limitation of this present work is the low response rate; however, its effect in this specific case is likely to be minimal, as previously discussed. Another drawback is the inability of the instrument to specifically identify the factors that led to students’ chosen responses. This was mitigated somewhat by the use of open ended questions which, though largely non-specific (asking students just to make comments and recommendations) provided some insight into these factors.

Although the importance of teaching epidemiology and biostatistics in medical school is generally accepted in the context of preparing doctors-in-training with the requisite skills to practice evidence-based health care, there is still some debate around how the content should be delivered for maximum student satisfaction and performance. We have demonstrated that different instructional strategies and methods can be successfully incorporated into teaching programmes, but an enabling environment, including suitable teaching staff and infrastructure, and active learners are essential to the process. Future work should consider how, if at all, learner and teacher characteristics such as age, gender and academic/professional history affect how instruction is delivered and received. Efforts to further reinforce the principles taught during their clinical rotations would strengthen the impact of the module. It would also be useful to explore whether academic performance is influenced by utilisation of different instructional strategies.

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The impact of an attendance policy on the academic performance of first year medical students taking the Fundamentals of Disease and Treatment course

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This study seeks to determine the significance of attendance in the improvement of academic performance of a first year course, Fundamentals of Disease and Treatment (FDT), in the medical programme at The University of the West Indies (UWI), Cave Hill, Barbados. The Fundamentals of Disease & Treatment course is an important introduction to the integrated approach that is used in the delivery of the medical programme. Medical students tend to have a poor attitude towards the course and this has negatively impacted upon their attendance at lectures, tutorials and reviews. This study investigates whether the enforcement of the Faculty of Medical Sciences’ (FMS) attendance policy where “students must have an attendance rate of 80% of all timetabled sessions to sit final course exams” improves students’ performance. The grades for in-course assessments and attendance for the FDT course were recorded and summarised systemically for the first year medical students during the academic year 2009-2010. The data were divided on a semester basis in order to reflect the period in which the attendance policy was not enforced (Semester 1) and when it was enforced (Semester 2). Paired students’ T-tests and other descriptive statistical tools were used to analyse the attendance and academic performance over both periods. Results show that there was significant increase in attendance during Semester 2 of the academic year 2009-2010. This significant improvement in attendance was not reciprocated with an improvement in academic performance in course assessments when the two semesters were compared. The findings suggest that other factors are more critical to academic success. Some of these factors may be well indicated in the holistic approach which is regarded as the best approach to the learning process.

Key words: attendance, holistic approach, academic performance

Introduction

In curricula with predominantly didactic teaching, attendance at classes has traditionally been thought to be a prerequisite to good academic performance. Some studies (Oghuvybu, 2010; Hancock, 1994; Riggs & Blanco, 1994; Shimoff & Catania, 2001; Khan, Khattak, Mahsud, Munir, Ali & Khan, 2003) have shown that there is a positive correlation between attendance and academic performance. In addition, several sources show a relatively consistent relationship between attendance and grades, regardless of the course subject or level of student (Le Blanc, 2005; Kirby & McElroy, 2003; Ali, Jusoff, Ali, Mokhtar & Salamat, 2009). However, in some instances, the degree of change may be negligible (Crede, Roch
These latter reports mention other confounding factors in the learning process, such as student motivation and levels of engagement, which may have a greater contribution to academic performance than attendance.

Studies have shown that learning and academic performance should be considered from a more holistic approach and the four main factors which are considered critical to learning are demography, active learning, students' attendance, and involvement in extracurricular activities (Ali et al, 2009). When top-performing medical students were questioned about the main factors for their success, some of the main factors highlighted were “attitude, beliefs and motivation” and “effort and perseverance” (The University of the West Indies [UWI], 2009). Attendance was not mentioned or attributed to their success (UWI, 2009) but one could argue that the highlighted factors are consistent with attributes of individuals with good attendance.

The Patel view of the holistic approach is that it can be applied in any discipline and develops students into critical, confident and independent thinkers (Cohall, 2009). Patel's study was based on his nine year teaching experience using Kelly's Personal Construct Theory (PCT). This approach resulted in sustained high levels of student attendance at lectures and seminars; improved progression, and appreciative and satisfied cohorts (Cohall, 2009). The consistent result of the holistic approach is that it enhances learning and is likely to increase academic performance. It also features attendance as being a contributing factor for such enhanced learning. One could argue that attendance increased as a result of more interesting class sessions or that the holistic approach requires active participation from the students hence attendance is crucial to the success of the learning and teaching style.

Nonetheless, despite conflicting reports about the degree of contribution of attendance to academic performance, in some training programmes, student attendance at classes serves other critical functions. For example, in physician training programmes attendance may be used as an indicator of professionalism at all levels of education. In the United States of America and Canada, the Liaison Committee on Medical Education, the accrediting body for medical schools, stipulates an attendance policy as one of the requirements for accreditation of medical undergraduate programmes (University of Minnesota, 2011). The University of the West Indies (UWI) has three main campuses. There are no mandatory attendance policies for preclinical training at the Mona and St. Augustine campuses. At the Cave Hill campus, with the 2008 expansion of medical undergraduate programme to include preclinical training, an attendance policy was introduced; however, it was not enforced until January 2010.

In addition to some studies showing that attendance and academic performance are directly correlated, some studies show a relatively consistent relationship between attendance and grades, regardless of the course subject or level of student (Le Blanc, 2005, Kirby & McElroy, 2003; Ali et al, 2009). In a meta-analysis reviewing the relationship of class attendance in college with grades and student characteristics, it was shown that attendance has strong correlations with
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The impact of an attendance policy on the academic performance of first year medical students taking the Fundamentals of Disease and Treatment course (Crede, Roch & Kieszczynka, 2010). Even with such strong evidence regarding the two variables, this meta-analysis also showed that mandatory attendance policies appear to have a small positive impact on average grades (Crede, Roch & Kieszczynka, 2010). However, some institutions such as the University of Minnesota justify an attendance policy by indicating that medical education requires in-person, active engagement among students, patients and faculty (University of Minnesota, 2011). Indeed, such an attendance policy is in keeping with the requirements of the Liaison Committee on Medical Education.

The Faculty of Medical Sciences at UWI, Cave Hill, has an attendance policy which states that “students must have an attendance rate of 80% of all timetabled sessions to sit final course exams” (UWI, 2009). This policy has been mentioned to all first year medical students but has never been enforced due to difficulties encountered in undertaking attendance registers in the tertiary setting. The challenge of low attendance rates in the preclinical phase of the medical undergraduate Bachelor of Medicine and Bachelor of Surgery (MBBS) curriculum is not seen in the clinical phase of the MBBS programme at UWI, Cave Hill. In the clinical phase, attendance is part of student professionalism, one of the key domains assessed during clinical rotations. In addition, there is small group teaching, which makes it easier to identify student absenteeism.

In December 2009, as part of an internal faculty review, the decision was made to enforce the Faculty’s attendance policy in the preclinical setting, starting from January 2010. This was communicated to students verbally and in written form. The rationale for the decision was that an anticipated increase in student attendance at lectures, should likely contribute to an improvement in the academic performance of preclinical students.

The Fundamentals of Disease & Treatment (FDT) course is an important introduction to the integrated approach that is used in the delivery of the system based courses in the preclinical phase of the MBBS programme at UWI, Cave Hill (Cohall, 2009). The FDT course is the largest course, in terms of teaching sessions, of the nine courses taught during the first year of the medical undergraduate curriculum. It spans both semesters. The course contributes six of the required 117 credits necessary for the attainment of the MBBS degree; and accounts for six of 29 credits available from first year courses. As a result of the significant content, FDT is frequently considered to be a major obstacle for students during their first year of medical undergraduate training at the UWI Cave Hill campus.

The FDT course provides an early introduction to basic disease processes such as infection, inflammation, genetic disorders, tumour pathology and disorders of growth. In addition, it provides an introduction to chemical structures and families of drugs that are used in the treatment of patients and how they work to modulate disease processes (Cohall, 2009). The course is delivered in a series of didactic lectures, tutorials and laboratory sessions, using an interdisciplinary approach. The members of the teaching staff are primarily from the disciplines of Pharmacology, Pathology, Physiology and Microbiology. Regardless of the
multidisciplinary approach, students tend to have a poor attitude towards the course. This poor attitude was noted in student-staff liaison meetings and student evaluations of the course. The poor attitude has negatively impacted student attendance at lectures, tutorials and reviews. Along with the relatively poor attendance rates, the academic performance in FDT has not ranked well when compared to the other courses in the first year of the MBBS programme.

Therefore, the aim of this research project was to determine the effect of enforcing an attendance policy on the academic performance of medical students taking the FDT course at UWI, Cave Hill during the academic year 2009-2010.

Methodology

Research question

Did the enforcement of the Faculty of Medical Sciences’ attendance policy that “students must have an attendance rate of 80% of all timetabled sessions to sit final course exams” improve the students’ performance in the Fundamentals of Disease and Treatment course?

Data collection

The grades for in-course assessments and attendance rates for the FDT course were recorded and summarised systemically for the first year medical students during the academic year 2009-2010. The data were divided on a semester basis which would reflect the period in which the attendance policy was not enforced (Semester 1) and the period when it was enforced (Semester 2).

Attendance at each teaching session in FDT was recorded through the use of sign-in sheets, one of which was circulated during each session. At the end of the session, the sheet with the students’ signatures was given to the instructor who then signed and submitted it to the Faculty Office. The information on the sheets was then recorded electronically in a Microsoft Excel database by the Secretarial Office staff on a continual basis.

Interpretation of data

The data were evaluated for the whole class and paired students’ T-tests used to determine any significant differences between the means of attendance and academic performance over the study period. Tests of normality including Quantile-Quantile (Q-Q) and residual plots were also performed; if the variables were normally distributed then parametric tests of correlation were used. If the data were not normally distributed, then a nonparametric test of correlation was used to determine if there were associations between the variables.

Results

Sixty three students were enrolled in the FDT course in the academic year 2009-2010. There were 13 males and 50 females. The mean class attendance for the
FDT course was 88.39 ± 11.34% in Semester 1 and 93.9 ± 6.50 in Semester 2. The mean class score in FDT course assessments was 56.41 ± 11.34% in Semester 1 and 55.85 ± 10.56% in Semester 2. The change in attendance between semesters was statistically significant (paired students’ T-tests; N = 63; p < 0.05). There was no significant change in the mean score in FDT course assessments between Semester 1 and Semester 2 (paired students’ T-tests; N = 63; p > 0.05). There was a positive association between attendance and overall course grade (Spearman’s rho 0.762; p< 0.01).

Figure 1. Line graph illustrating each student’s FDT attendance (%) by semester
Discussion

Overall, the results from the study of the first year students who completed the FDT course in the academic year 2009-2010 showed that after the FMS' policy on attendance was enforced there was a significant improvement in attendance. This finding is consistent with the results of a previous study (Shimoff & Catania, 2001) which looked at the effect of recording attendance on academic performance in an introductory psychology course at the University of Maryland.

On comparison of the two semesters for the academic year 2009-2010, the significant improvement in attendance was not reciprocated with an improvement in academic performance. This differs from the evidence reviewed prior to this study, which indicated the importance of attendance at teaching sessions in the learning process (Oghuvybu, 2010; Hancock, 1994; Riggs & Blanco, 1994; Shimoff & Catania, 2001; Khan et al, 2003; Gal, Busturia & Garrido, 2011; Hammen & Kelland, 1994). However the finding was consistent with a meta-analysis which indicated that mandatory attendance policies had no significant effect on academic performance.
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performance. A previous study which investigated a similar introductory course, Human Physiology, at another medical teaching institution (Hammen & Kelland, 1994) had shown a statistically significant correlation between attendance and academic performance. However, the effect was of such a small magnitude, that the authors concluded that the effect of attendance on academic performance was helpful statistically, but attendance was not a decisive factor in the learning process for the physiology course. The main difference in this comparative study was that there was no enforced mandatory attendance policy.

In this study, an improvement of the academic performance in the second exam by similar margins was consistent in each semester. This further emphasises the consistency of the students’ performance during the two semesters. It also attests to the assessment strategy and standardising process of assessments in both semesters. The lack of a significant improvement in the academic performance of medical students on comparison of the two semesters supports the holistic approach to learning and teaching in which attendance is a contributor to, but not the main determinant of the learning process (Patel, 2003).

The results from the overall data analysis indicate that attendance, even though critical to the learning process, is not the single most important factor in the learning process and suggest that other factors are critical to academic success. Besides student-related factors, the effect of other factors, particularly classroom and teaching-related ones should be considered in the analysis of student attendance and academic performance. Some of these factors may be well indicated in the holistic approach which is regarded as the best approach to the learning process.

While the results can be explained, there could be some limitations. The possible limitations are:

1. The in-course exams could have been testing different content material at varying levels of complexity.
2. The attendance in Semester 1 was 88% so there may have been a threshold for improvement on academic performance even with a significant increase in attendance after the enforcement of the policy.
3. Varying teaching styles from instructors may have been incorporated which would not allow one factor such as attendance to be the critical or limiting factor in leading academic improvement.
4. The use of sign-in sheets may not be the best method to record attendance during classes.

The first and third limitations may stand some merit. The point is well supported that different subject material may have varying degrees of difficulty. This course has five modules of different disciplines and three of the five were tested in Semester 1 and the other two were tested in Semester 2. Despite this, the number of contact hours per semester was the same. Even though this was considered, efforts
to make our assessments valid and reliable by standard setting question papers and equating tables of specifications for in-course assessments would have nullified some of the varying disparities which would have arisen from this limitation. The third limitation regards the fact that the course is multidisciplinary and has different people teaching different subject areas. While it is reasonable to appreciate that different individuals may have different teaching styles, the course was delivered by didactic lectures, practical sessions, tutorials and reviews consistently across the two semesters.

The results of this study not only indicate that attendance is not the sole and most important factor in improving academic performance, but also may inadvertently show that the emphasis on attendance should be considered from the teaching end of the classroom. This is the view supported by the holistic approach which results in sustained high levels of student attendance at lectures and seminars, improved progression, appreciative and satisfied cohorts (Amini, Dehghami, Kojuri, Mahbudi, Bazrafkan, Saber, Karimian & Ardekain, 2008) where it is not the attendance which drives academic performance but teaching that is heavily focussed on active learning, which leads to improved class sizes and better learners.

Further research questions from this study are:

1. If the holistic approach to learning and teaching is utilised more by instructors of the course, will there be an improvement in academic performance and attendance as primary outcomes?
2. Would there be better academic performance from the students if it was the responsibility of the various instructors to maintain the attendance rate in the classes based on the effectiveness their teaching styles?
3. Are there any differences in attendance by student gender? What is the impact of the age and previous academic experience (secondary vs. postgraduate) on student attendance and academic performance in the MBBS programme?
4. What are students' perceptions and attitudes towards the mandatory attendance policy in the Faculty of Medical Sciences, UWI, Cave Hill?

Acknowledgement

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An examination of the practical learning experiences of first year Clinical Psychology master's level students: a qualitative study

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The aim of this study was to examine the expectations and actual experiences of first year Clinical Psychology master's students at the University of the West Indies Mona Campus before and after clerking. Participants included nine first year students between the ages of 19 and 21. Participants were required to take part in a semi-structured interview as well as participate in two focused interviews. The results indicated that the majority of the participants (7) reported that their expectations did not match their experiences before clerking; however, all participants reported congruency post clerking. Recommendations and limitations are discussed.

Key words: practicum, clinical psychology, ward round, clerking

Introduction

As stated by Hatcher and Lassiter (2007, p. 49), the practicum in clinical psychology is “the first step on the path of professional development toward independent professional competencies in psychology. The practicum comprises supervised training experiences… [and] …introduces students to the core competencies of the discipline, bringing classroom education to life in practice settings, and laying the groundwork for further training in internship and beyond.” Most Clinical Psychology master's programmes, both locally and internationally, require students to complete a specified number of practicum hours. The Clinical Psychology programme at The University of the West Indies, Mona Campus, similarly requires 730 hours of practical learning experiences encompassing four practicums; two during the first year and two during the second year. The two practicums during the first year are internal placements and are completed at The University Hospital of the West Indies' Psychiatric Ward - Ward 21. Requiring students to complete their initial practicums at the University is in accordance with international and ethical standards (UOW Clinical Handbook, 2012) and allows for maximum supervision and preparation of students before external placements. Since the inception of the master's programme in 2001, the students' involvement in these practicums has been limited and entails listening to reports on patients given by the psychiatric consultants and residents. When the master's programme was developed the vision was to produce students with the theoretical ability and practical skills to work in
a variety of roles and settings within the Caribbean. Specifically, the programme aims to graduate students who can theoretically analyse/assess and implement treatment from a conceptual approach (The University of the West Indies, Clinical Psychology Programme Brochure, 2005). It is the belief of this author that this vision is not being realised as students’ limited contact with patients during their first year makes them ill-prepared to understand how patients seen on the ward, and in general, are more than the diagnosis with which they are labelled.

Further to this, the students in the Clinical Psychology programme often complained of feeling as if they were not a part of the psychiatric community and questioned the role of the psychologist in ward rounds. In the beginning the role of the psychologist in ward rounds was practically non-existent, as there was only one psychologist who was expected to attend ward rounds, conduct groups and address the individual psychological needs of the patients. The students in the first two cohorts of the programme interfaced primarily with psychiatrists and other members of the psychiatric team with little to no input from the psychologist. Realising that the lack of representation of psychologists at ward rounds would adversely affect the vision of the programme and the overall training of the students, psychologists joined all teams (known as firms) on the ward in 2003. Although this change was seen as a necessity for the training of the psychology students, the transition was not flawless. Traditionally ward rounds are managed by psychiatrist; therefore, the psychologist’s role was constantly in question.

In trying to identify the role(s) which the psychologist could assume it is first necessary to understand their competencies. One of the many competencies of a psychologist is that of assessment and psychological testing, hence, it is evident that the psychologist could make a contribution to solidifying the diagnostic process of the patients seen on Ward 21. This process is important because the diagnostic labelling will have implications on the way in which patients are viewed by others. In the role of psychodiagnostician the psychologist would help to “diagnose the total personality of the patient by integrating his/her findings with the case history and the medical, psychiatric and neurological data” (Kutash, 2006, p. 324); thus the patient is seen and treated as a whole person through the use of a conceptual approach. Another competence is that of analysing and theorizing, thus the psychologist could emphasise the psychosocial aspect of the patient’s diagnoses paying special attention to family and developmental history, as well as bringing a theoretical understanding to the current diagnoses.

With psychologists on all firms of ward round and a clearer understanding of the possible roles and competencies of the psychologist, the expectation was the formulation of a multidisciplinary team and enhanced training opportunity for both the medical and psychology students. However, the reality was that the psychologist participated minimally and the psychology students played the role of observer.

It is common knowledge that “conducting a ward round is a complex task that involves both patient management and team working skills” (Norrgard, Ringsted & Dolmans, 2004; Wray, Friedland, Ashton, Scheurich & Zollow, 1986,
cited in Fiddler et al. 2010, p. 119); and that, successful ward round provides an opportunity for multidisciplinary working (Fiddler, Borglin, Galloway, Jackson, McGowan & Lovell, 2010). Thus the task set forward was to find a way to incorporate psychology in order to achieve the goals of the programme and ward round.

**Aim**

The aim of the study was to assess the students’ perspective of their practicum experience as it relates to their contact with patients, level of involvement and feelings of preparedness for future practicums. The study also re-assessed the students on the same (above mentioned) variables after they clerked patients on the ward.

**Method**

During the 2005-2006 academic year all ten first year students of cohort five were approached to participate in the study; one student deferred acceptance mid-way in the semester, therefore, nine students participated. Participants were all females and between the ages of 19 and 21; eight participants were Jamaican and one was Barbadian. A semi-structured interview was developed by the author; this interview was developed based on the author's interaction with students and understanding of the students’ experiences and needs. The interview comprised of five open-ended questions targeted at gathering information on students’ experiences of ward rounds before and after the implementation of clerking. During the first semester of the 2005-2006 academic year all students attended both firms of ward rounds and participated minimally. For the second semester the students were divided and assigned to one of the two available firms on the ward. Students liaised with the psychiatric nurse on the ward who identified the patients according to their assigned firm. After training students were required to clerk patients obtaining information regarding reason(s) for hospitalisation and psychosocial history. Students then presented the patient(s) at ward round paying special attention to the theoretical underpinnings of the patient’s current diagnosis. It should be noted that at this point in their training students were not prepared to provide treatment, therefore, they referred all arising issues to the psychiatric nurse or consultant.

**Focused interview**

The author met with the participants two times over two semesters of one academic year. The first meeting took place at the end of the first semester, while the second interview occurred at the end of semester two. After completing the interview, on both occasions, the students were allowed to expound on the questions and discuss additional concerns. During the first meeting the students spoke mainly about their experiences, specifically those that were different from their expectations and made suggestion for possible changes. During the second interview the students compared their experiences from semesters one and two. Responses were both audio taped and recorded in writing. The interviews were then transcribed and
responses to open-ended questions were analysed using content analysis (Day, 1993; Weber, 1990 cited in Wagstaff & Solts, 2003) with emergent themes being identified.

Ethical considerations

Ethical approval was obtained from the Faculty of Medical Science's (The University Hospital of the West Indies) ethics committee. After this approval was ascertained, an initial interview was conducted with all participants where they received minimal briefing on the purpose of the study. Participants were informed that all information shared with the research investigator would be confidential. Participants were informed that their participation is voluntary and that they were free to withdraw from the study at any time without any penalty. Informed consent forms were distributed at the initial interview session and obtained from all participants. All responses were coded using numbers, no names or other identifying information was used.

Results

Question #1: What was your expectation for this practicum experience?

Pre-Test:
Seven of the participants stated that they thought they would be working closely with patients through the process of clerking. Other responses included gaining an understanding of how psychiatric wards operate; observing how psychologists and psychiatrists interact with and interview patients; and increasing knowledge base regarding DSM IV classification of Mental Disorders.

Post-Test:
Five participants stated that they expected to interact more with patients on the ward in order to learn about them. Another three stated that they expected to make presentations in ward rounds, thus increasing their participation. Other responses included broadening and better understanding the psychiatric experience; having more opportunities whereby their views and opinions would be welcomed by the psychiatrists; and working more than in previous semester.

Question 2: Was your expectation met?

Pre-Test:
Six of the participants reported “partially”; while three said “no”.

Post-Test:
All participants stated that their expectations were met.
Question 3: Describe your experiences of this practicum. What were the strengths/weaknesses?

Pre-Test:
Strengths: Having psychologists present during the ward round was the dominant answer (3). Other responses included having an opportunity to learn new things; gaining first-hand experience of what psychiatry is about; and getting an introduction of different illnesses and presentations of symptoms from different patients.

Weaknesses: The dominant answer was not having more experience with patients (2). Other responses included needing a stronger psychological presence; being exposed mainly to patients with schizophrenia; and feeling like a guest observing rather than a student.

Post-Test:
Strengths: Interacting with the patients provided real life experiences of what the different mental illnesses are and their impact on the lives of people (3); another three stated that having a chance to exercise what they were taught, which provided a sense of fulfilment as information gained was more than what was in the patient's docket. The final three participants stated that a major strength was the presence of a psychologist in the room who actively participated. Other responses included being able to tour the ward and being trained on the process of clerking; being able to offer advice on patient care; and gaining practical, psychological and emotional experience, specifically, learning what the field is like and what is expected of them behaviourally.

Weaknesses: Participants stated that more organisation was needed in assigning students to patients, as patients became burdened by repeated interviews (4). Other responses included having insufficient resources to provide adequate care of patients; unwelcoming interactions with the nurses on the ward; and not consistently having a psychologist in all firms.

Question #4: Do you feel prepared for future practicums?

Pre-Test:
Five of the participants reported that they didn't feel fully prepared, but believed that they would be with more experience (this response represented the dominant response). The other four of the participants answered no.

Post-Test:
All participants stated that they felt prepared for future practicums.
Question #5: Did you feel as if you were part of the psychiatric community? Did you feel that your feedback/comments were welcomed/regarded as competent/useful?

**Pre-Test:**
Six reported that initially they felt unwelcomed and incompetent, but felt that things changed gradually. One participant stated “no” and the remaining two stated “yes” they felt welcomed and part of the psychiatric community.

**Post-Test:**
The dominant answer (8) was “yes”; while one participant reported that they felt “somewhat” welcome, competent and part of the psychiatric community.

**Discussion**
The main objective of this study was to examine what students expected from their practicum training versus what they actually received in areas such as client contact, supervision/involvement and clinical preparedness/competence. Practicum is the clinical training provided before students have completed their academic requirements and is a crucial part of the training of students in clinical psychology. Practicum provides students with the opportunity to develop their basic clinical skills and to become familiar with working in a mental health setting; it also allows students to practice teamwork and interdisciplinary communication. Knowing how crucial the practical learning experience is to the overall development of the clinical psychology student, this author undertook this study to examine whether the students in the Clinical Psychology programme at The University of West Indies, Mona Campus were gaining the necessary skills towards becoming well-rounded practitioners. In doing so, the students were asked to give their perspective on their practical training by comparing their expectations with their actual experiences. Gross (2005, p. 299) speaks about the importance of such a study as “this aspect of the training is less studied”; even more so is the “student’s perspective which could benefit graduate programs in their efforts to provide the best training”.

**Client contact**
Students limited exposure to patients and incongruous experiences and expectations were the major themes. The majority of the students stated that they thought that they would have had the opportunity to clerk patients and walk on the ward (meeting patients), instead their experiences included “sitting around listening to the reports” presented by the psychiatric members of the team (consultant, resident or medical student). It is this author’s belief that interacting with patients and being exposed to the operations of the ward is paramount in the training of Clinical Psychology students. However, in the endeavour to ensure the best training of the students while maintaining ethical and professional standards certain precautions
needed to be emplaced. Before beginning the process of clerking, students were required to observe ward rounds with minimum interaction with patients for the first six weeks of their practicum; during the seventh week, students were trained on the process of clerking and were given a tour of the ward, after which they began clerking and presenting patients during ward rounds. Students continued their clerkship into their second semester. Students were reminded that their role is one of interviewee and not therapist; therefore, all ensuing issues were to be brought to the attention of the consultant on call, the psychiatric nurse or the assigned psychologist.

The implementation of clerking met the needs of the students as well as enhanced the standards of the programme. This is noted as all of the participants reported that their expectations were met after they began their clerkship.

**Supervision/Involvement**

When asked to describe the strengths and weaknesses of their practicum, the issue of supervision as it is related to the involvement of the psychologist was reiterated. Students identified the presence of psychologists in ward rounds as a major strength; however, having psychologists who participated minimally or attended inconsistently was seen as an area of weakness.

One of the key features of a “traditional psychiatric ward round is having a wide array of professionals being present to include psychiatrists, social workers, occupational therapists and nurses” (Fiddler et al. 2010, p. 120). No one can argue against the importance of having a multidisciplinary team to help with the treatment and management decisions of patients, however, the question of whether the psychologist should be a part of this team (as is seen in the omission of the psychologist in the above citation) as well as the role of the psychologist remains unanswered. In trying to answer this question, psychologists were added to all firms of Ward 21 in 2003; the expectation was that the psychologist would supervise the clinical psychology students and add to the multidisciplinary team in patient care. It is this author's belief that the psychologists' role is another area in which expectations and actual experiences are incongruent. This is seen throughout the participant's responses as they cited the psychologists' presence in ward rounds as both a strength and weakness. That is, having a psychologist present during rounds was noted as an obvious strength, but not feeling the psychologists' presence was a weakness. Specifically, participants regarded a psychologist who participated minimally and attended inconsistently as a weakness.

This marginalisation of the psychologist also speaks directly to participants concerns of feeling unwelcomed; this was observed during pre and post-clerking as six of participants reported feeling “unwelcomed” prior to clerking and one reported still feeling “somewhat unwelcomed” post-clerking. Psychologists being marginalised in psychiatric wards is not a new phenomenon as traditionally psychiatric wards are headed by psychiatrists. One explanation for the lack of involvement may lie in the differences in how psychiatrists and psychologists
view their cases and pathology in general. Psychiatrists emphasise the medical model, which is a “biological disease model” (Kingsbury, 1987, p. 153); while the psychologists acknowledge the importance of the biological aspect of pathology, they also consider that understanding pathology requires the use of multiple perspectives. Psychologists emphasize the psycho-social aspects while incorporating the biological aspect, thus focusing on the bio-psycho-social disease model. This difference may lead to a breakdown in communication and eventual territorialism. For example, under the medical model diagnostic categorisations are seen as important and a necessary part of treatment, “while there are some camps within psychology that feel that diagnosis is unimportant and labelling persons only create stigma and minimizes the uniqueness of the individual” (Kingsbury, 1987, p. 153).

Attaining a “diagnosis is the focus in medical training because diagnosis implies cause which leads naturally to treatment” (Kingsbury, 1987, p. 154). As was cited from a medical textbook, “Once the diagnosis is made, the treatment often is rather apparent” (cited in Kingsbury, 1987, p. 154). Psychiatrists tend to believe that it is only through diagnosis that patients can be correctly treated. Psychologists, however, may consider that not all mental illnesses are biologically caused; that symptoms are varied and transient, therefore, assessment/diagnosis and treatment has to be as varied (and at times transient). Therefore, trying to adequately treat a patient based solely on diagnosis might be seen as flawed and might hinder the opportunity to holistically understand the individual. As a psychologist on a psychiatric ward I have seen psychiatrists begin to incorporate other models, such as the bio-psycho-social model, in their assessment of patients, however, I am still aware that even though “many Psychiatrist may acknowledge the inadequacies of the diagnostic system, diagnosis is still most central to the treatment process” (Kingsbury, 1987, p. 154).

So the eventuality of the multidisciplinary approach on Ward 21 is that the psychologists/psychology students participate minimally, are exposed to more medical than psychological jargon whilst the psychologists’ role remains questionable. Another consequence is that the psychology students continue to feel misplaced and unwelcomed.

Preparedness/Competence

An interesting finding of the current study was the students’ belief that they were more prepared for future practicums after clerking, even though they felt somewhat unwelcomed and saw the psychologist being marginalised. This finding can be explained by the fact that being exposed to patients gave students the opportunity to integrate theory with practice. Although students were not allowed to implement therapy, their contact with patients exposed them to the psychosocial aspect of diagnosis and gave them a better understanding of the patient as an individual.

Participants reported that the strengths of clerking was interacting with patients which provided real life experiences of what different mental illnesses are
and its impact on the lives of people; having a chance to exercise what they were taught (i.e. interviewing skills, case conceptualisation); having a sense of fulfilment when they were able to gain more detailed information (from patient) than was provided in their docket, and being able to offer advice on patient care.

Participants’ exposure, even though limited, erased the novelty of the ward and allayed the fear and anxiety that is an inevitable consequence of working with psychiatric patients; therefore participants will be better prepared and feel same.

**Recommendation**

In order to continue to meet the needs of the students in the Clinical Psychology master’s programme at The University of West Indies, Mona Campus, while actualising the vision of the programme it is recommended that students increase their face-to-face client contact by beginning their clerkship earlier in the programme. This will not only increase the students’ level of competence, but it will also increase their practicum hours aligning them (and the programme) with international standards.

It is also recommended that psychologists conduct their own ward round. While the importance of a multidisciplinary team in patient care is advantageous and shouldn’t be underestimated, it is this author's belief that students in the Clinical Psychology programme would benefit from an approach that incorporated both the medical and the psycho-social models. In doing this, students would continue to clerk patients on the ward and attend ward rounds (with the multidisciplinary team) on one of the two mandatory days. On the other day, students would attend rounds with the assigned psychologists; there they will receive supervision on patients seen, discuss issues related to assessment and diagnosis and present case conceptualisations using the bio-psycho-social model.

**Limitation**

The limitation of the study was the fact that the author was also the coordinator of and lecturer in the Clinical Psychology programme being studied. The author was mindful of the possible effect that the dual roles could have on the students’ participation and candidness. In trying to minimise these effects, the participants were given the option to withhold participation with the assurance that there would be no penalties, to include impact on their grades or relationship with the author. Also responses were coded with numbers, therefore participants’ identities were never revealed.
References


The University of the West Indies. (2005). *Clinical Psychology Programme Brochure*.

