Examining the Academic Writing Practices of Higher Education in Papua New Guinea: The Need for Using Appropriate Educational Resources

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Abstract
The current global trend in education paves way for new and improved means of academic writing practices in higher education, with which most of the higher education institutions in Papua New Guinea (PNG) are struggling to measure up. This comparative case study of a public and a private (mission) university in PNG examines the concerns and challenges that they encounter to support their academic writing practices. Multiple sources of data were obtained through semi-structured interviews, non-participatory observations and documentation searches. In the study, a total of twelve students, four tutors, four lecturers, and five academic administrators were interviewed after they were identified and recruited through a process of stratified sampling. Four tutorial groups of which, two from each participating university were observed. Data were also collected from policy documents which relate to the academic writing practices of the two universities. The data were analysed using a combination of data analyses methods which include interactive model of data analysis, activity system of data analysis, thematic analysis and NVivo research tool as informed by an activity theory, which anticipates that for a system to produce a desired outcome, it needs inputs from all the actors in the system. The findings suggest that the public university seems to struggle more to meet its academic needs compared to the private university. Academic writing practices of the two universities vary depending on the availability and provision of their online educational resources like 'Moodle,' multimedia, databases, Wi-Fi and other supports such as expertise and educational facilities.

Keywords: Academic writing, activity system, educational resources

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Introduction

Papua New Guinea (PNG) is one of the Melanesian countries in the Pacific region. It has an estimated population of 8 million with different ethnic groups. The country has three official languages (Tok Pisin[1], Hiri Motu[2] & English), and 840 living indigenous languages (Simons & Fennig, 2018), which is twelve percent (12%) of the world's languages, more than any other single country (Lewis, 2009 & Volker, 2015). Thus, students and educators[3] are either bilinguals, trilinguals or multilinguals. That is, in every classroom, there are individuals who know or speak more than one language. Because of this complex discourse environment that PNG offers (Pickford, 2014), it makes academic writing practices in higher education more challenging when students apply the English language. This calls for mediation from all key actors within individual institution's activity system[4] to contribute meaningfully in terms of educational resources and other tools to achieve desired outcome of their academic writing practices.

This report presents part of the findings from a comparative case study done at two universities in PNG. To protect the identities of the participating universities, they are labelled as University A and University B. The data are from one of the four themes of this study which is educational resources. The educational resources include infrastructure development, curriculum and other educational materials, educational equipment, online educational resources, and teaching staff. The report begins with a brief literature review, followed by research methodology, findings and discussions with a conclusion.

Literature review

This study is underpinned by activity theory. The activity theory or system "is a cross-disciplinary theoretical framework that stems from the works of 18th century classical German philosophers Kant and Hegel, dialectical materialism of Marx, and psychological works of Vygotsky" (Bertelsen & Bodker, 2003; Roth & Lee, 2007, cited in Sam, 2012, p.84). It is based on the idea that human activities take place in cultural contexts. They are mediated by language and other symbol systems and can be best understood when investigated in their historical development (John-Steiner & Mahn, 1996). In support of the activity theory, the notion of activity system model was introduced. Engestrom (1987) came up with the concept of activity system model which uses a triangular framework to illustrate how the activity system works in a more applicable and meaningful context. Mwanza (2001) further articulates that the activity system model incorporates subjects, objects, and community components. It also includes mediators of human activity, namely: tools, rules and division of labour. All the components in the activity system framework are meant to support each other

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[1]Tok Pisin is a lingua franca spoken by Papua New Guineans. It is also referred to as Melanesian Pidgin (Gerry, 2010). It can also be labelled as Melanesian Pidgin English, New Guinea Pidgin or Neo-Melanesian. Tok Pisin is the official name of the language since 1981(Schulte-Schmale & Naujoks, 2008).

[2]Hiri Motu is an official language mostly spoken by the Papuans (people of Papua) within the Southern region of PNG.

[3]Educators refer to lecturers, tutors, academic administrators, or teaching (academic) staff in this study.

[4]Activity system or theory describes how effectively and successfully language learners in a joint activity interact to learn and use English in academic writing tasks (Mwanza, 2001 & Doecke & Kostogriz, 2003).

in a collaborative manner to produce the desired outcome, as shown in the following diagram.

(Engestrom, 1987 & Engestrom, 2000)
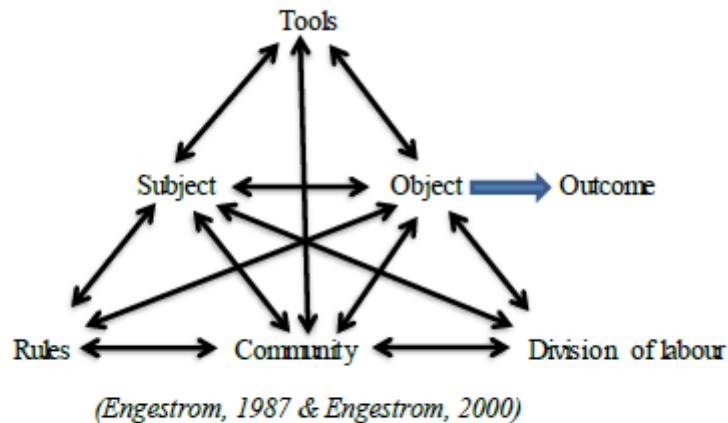
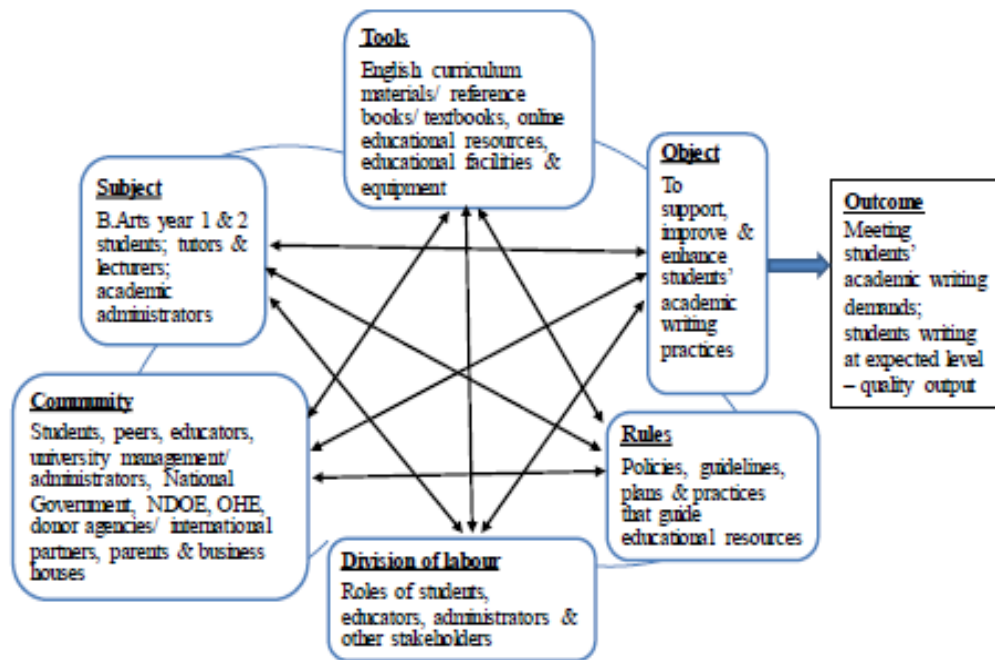**Figure 1: Key components of the activity system**

The activity system model presents the relationships that exist amongst the different players (tools, subject, rules, community, division of labour and object). The *subject* in the model is the individual or groups of individuals involved in the activity (Yamagata-Lynch, 2010). It is further stated that "the *object* is the goal or motive of the activity" (Yamagata-Lynch (p.2). *Tool* or instrument, as Engestrom (2000) stated, is the other component of the activity system model. It refers to "social others and the artefacts that can act as resources for the subject in the activity" (Yamagata-Lynch, 2010, p.2). Furthermore, *rules* or regulations refer to norms that circumscribe the activity (Zurita & Nussbaum, 2007). Additionally, the *community* in the activity framework is the environment, other activity systems and people that share the same object (Sam, 2012). Further, *division of labour* denotes the "separation of duties allowed for specialization of roles and tasks, increasing the quality of the outcome" (Baran & Cagiltay, 2010, p.159). The connections and interactions of all these actors affect the *outcome* which is the result of the activity (Yamagata-Lynch, 2010). Hence, all the actors are required to interact meaningfully within a system to produce a desired outcome.

Consistent with the theoretical framework of activity system, this study identifies how PNG tertiary students can participate effectively in academic writing practices. This can be done through well-defined sociocultural activity[5] and language and literacy activity [6] (Duff, 2002 & 2007), and disciplinary-based[7] academic writing activity (Starfield, 2007) with support from other elements like educators, peers, teaching and learning pedagogies, curriculum materials, educational resources and so on as illustrated in an extended version of the activity system model in the next diagram.

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[5]Sociocultural activity refers to an activity that involves human interaction with their culture and environment (Duff, 2002).
[6]Language and literacy activity refers to an activity that involves reading and writing using the target language or medium of instruction (Duff, 2007).
[7]Disciplinary-based involves writing using specialized vocabulary and concepts within specific disciplines (Starfield, 2007).

Tools
English curriculum materials/ reference books/ textbooks, online educational resources, educational facilities & equipment

Subject
B.Arts year 1 & 2 students; tutors & lecturers; academic administrators

Object
To support, improve & enhance students' academic writing practices

Outcome
Meeting students' academic writing demands; students writing at expected level – quality output

Community
Students, peers, educators, university management/ administrators, National Government, NDOE, OHE, donor agencies/ international partners, parents & business houses

Rules
Policies, guidelines, plans & practices that guide educational resources

Division of labour
Roles of students, educators, administrators & other stakeholders

(An extended version of activity system adapted from Engestrom, 1987 & Engestrom, 2000)

Figure 2: Using activity system framework to facilitate academic writing practices at higher education institutions in PNG

The diagram shows how different actors within the activity systems of University A and B supposed to interact to produce expected outcome in their academic writing practices. The subjects and members of the community are expected to execute their respective roles based on appropriate rules. They also need the necessary tools to mediate students' academic writing practices so that the objective of academic writing is achieved. These key actors would then, determine the outcome that is to meet students' academic writing demands, ensure students write at expected level, and produce quality output. However, there is no guarantee that there will always be agreements between the actors. That is, there are possibilities of disagreements and contradictions to exist in the activity system. Some of the examples are highlighted in the findings and discussion section.

Research methodology

Case study research design is employed as a naturalistic inquiry and qualitative method in this study. It focuses on "understanding the dynamics present within single settings" (Huberman & Miles, 2002, p.8). The study incorporated comparative case study to investigate and address the issues underpinning academic writing activity by studying and comparing two cases. That is, its goal is to discover contrasts, similarities, or patterns across the cases being studied (Campbell, 2010). The cases of these study are University A and University B. University A is a public institution with an estimated student population of 4700 and about 300 teaching staff. For University B, it is a private (mission) institution with an estimated student population of 1600 and more than 100 teaching staff at their main campus. "The cases are normally studied in depth in order to provide an understanding of individuals' experiences, issues, insights, developmental pathways, or performance within a particular linguistic, social, or educational context" (Duff, 2014, p.233). The units of analyses for this case study include multiple cases. That is, it is a multisite study that

involved multiple sources of information obtained from interviews, observations and documentations (Creswell, 2013). Semi-structured interviews were conducted with six B. Arts year one and six B. Arts year two students, four tutors and four lecturers, and five academic administrators[8]. Non-participatory observations were also conducted with two B. Arts year one and two B. Arts year two tutorials. Additionally, documentation searches were also conducted whereby students' essays and curriculum materials were obtained. More so, some paper-based and online policy documents were accessed.

The analyses of data are informed by Miles and Huberman's interactive model of data analysis; activity theory and thematic analysis. To obtain a more accurate and clear data analyses and displaying of the findings, NVivo research tool was also used together with the other data analyses tools. This computer assisted qualitative data analysis software (CAQDAS) is aiding the researcher in his search for an accurate and transparent picture of the data whilst also providing an audit of the data analysis process as a whole (Welsh, 2002). All the analyzed data are kept in the NVivo files that are only accessed by the researcher and are used for the purpose of this study.

Findings & discussions

This report presents data for the theme educational resources. The data are discussed under five subsections which include: infrastructure development, curriculum and other educational materials, educational equipment, online educational resources, and teaching staff. The data revealed that there are similarities, contradictions and differences that exist within each participating university's activity system and between the universities which are highlighted and discussed here.

Infrastructures

In tertiary education institutions, infrastructures like classrooms, computer laboratories, libraries and other facilities are very important tools as part of the activity system that facilitate academic writing practices. According to the student interviewees at University A, there are many students enrolled in 2016 with influx of first year students. One of them reiterates, "The spaces in the computer laboratories, library and lecture rooms are full so when some of us see that we don't have spaces, we pull back, so we miss opportunities" (Year 1 Student 3, 25/10/2016: 1pm). The data imply that there is shortage of educational facilities at University A which are important tools in the University's activity framework. Therefore, with the increased students' intake, it affects their learning opportunities. Moreover, the participating tutors and lecturers expressed that infrastructures of University A have to be expanded. In agreement with the tutors and lecturers, an academic administrator mentioned that University A is growing and therefore it is expanding in terms of programs and courses. As new programs are developed and offered, they also expect increase in student admissions. The interviewee further elaborates, "Those changes have implications for resources including staffing and, teaching and learning facilities like the classrooms, multi-media, and other equipment and materials that aid teaching and learning" (Academic Administrator 1, 01/11/2016: 10am). These data imply that

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[8]Academic administrators in this study refer to those administrators who perform their administrative duties and teach courses at tertiary education institutions.

the more the University increases its admissions, it has implications on its existing educational resources.

In comparison with University B, a student states, "All our teaching and learning facilities are up to the standard expected" (Year 2 Student 5, 17/03/2017: 10am). This data informs that there is appreciation from the students on the accessibility of various educational resources at University B. Also, the educators expressed that there are not many concerns on the provisions of infrastructures which include classroom and boarding facilities because they have appropriate student numbers to manage, which are somewhat different to what is experienced in University A. Nevertheless, one of the Academic Administrators indicates, "We are constructing new buildings so in the future, we will try to increase the number of students" (Academic Administrator 1, 15/03/2017: 9am). These data suggest that University B is enrolling students based on the availability of its facilities. Further, the University is currently managing its existing facilities and has the potential to upgrade and expand its infrastructures and increase its students' enrolments.

Curriculum and other educational materials

Tertiary education institutions need adequate curriculum and other educational materials to run their programs and courses which are important elements in the activity system. The student interviewees from University A indicated that their library has insufficient books and other reading materials, and most of the ones that are available are outdated. One student mentioned that when lecturers give them assignments to write, they expect them to cite recently published literatures. The student further states, "But, how can we find latest literatures when we have mostly outdated materials in the library? So, that affects our work and study" (Year 2 Student 2, 26/10/2016: 11am). Evidently, academic libraries are required to offer up-to-date and reliable information in a useful form for the needs of studies, learning, teaching, research, and education of people (Seppänen & Laitinen, 2017). Additionally, the participating educators also agreed that they need updated resource materials and reference books. These data are consistent with Dumbrigue, Moxley and Najor-Durack (2013) who stated that meeting the needs of students and educators and helping them to overcome the issues or challenges they face, require the creation of support systems that integrate the resources students and educators need to move on in their education successfully. However, this is not passably happening at University A Therefore, it is a huge impediment for a growing University that strives for academic excellence as stipulated in its vision statement.

Whereas for University B, a student stated that the library facility is great where he can easily access latest readings and reference materials. However, according to the participating educators, the University has introduced a paperless policy in which they are minimizing the use of paper and maximizing the use of computers and other equipment to facilitate their academic activities. Despite the paperless policy, a lecturer highlights that, "in the last couple of years, we have gone paperless, but I think we still need to buy important books" (Lecturer 2, 15/03/2017: 1pm). These data show that there is contradiction between the key actors in University B's activity system, whether to strictly observe the paperless policy or to also allow the use of paper-based literatures. However, based on the need analysis, it is appropriate for the University to provide important paper-based literatures for students and staff to use

although most of the educational materials are online.

Educational equipment

It is an ongoing challenge for University A to provide the necessary educational equipment that are needed. The student interviewees stated that computers are scarce, and they are not fully utilizing what is available. A student affirmed that computers in the computer laboratories are limited because there are many students to use, and students are rushing for computers on a first-come, first-serve basis. Another student suggested that the University has to minimize students' intake so that students who are already there can fully utilize whatever resources that are available. One of them reiterates, "The University Administration must have some restrictions in taking new students into the University. They must take in students according to the budget given by the government and the resources that are available at the University" (Year 1 Student 3, 25/10/2016: 1pm). These data indicate that influx of students has detrimental effects on existing educational equipment and facilities, which seems to be a policy issue. Additionally, such failure within the University's activity system does affect the outcomes of its academic writing practices.

The participating tutors and lecturers also agreed with the students. They indicated that up-to-date educational equipment and materials are needed at University A. One of them said that whiteboards in the classrooms are old and they need replacements. This is in support of the findings from the tutorial observations. It was noted that the tutors wrote some brief notes on whiteboards, but the notes were unclear because of the poor quality of the whiteboards. Furthermore, the participating academic administrators highlighted that there is lack of multimedia in the classrooms. They suggested that it will be helpful if most or all classrooms are equipped with projectors, laptops and new whiteboards. As noticed in the University's Corporate Plan 2013 – 2017 and the University's Strategic Plan 2013 – 2017, part of the focus area looks at equipping certain classrooms with latest high tech fit out to provide robust teaching and learning effectiveness. This is not fully achieved as shown in this study.

The experiences of University A are somewhat different to University B. The students from University B indicated that due to their paperless policy, they use desktop computers and laptops. Further, as noticed in the tutorial observations, multimedia in the form of projectors, laptops and whiteboards was used to facilitate the educational activities. This practice is consistent with Gunawardhana and Palaniappan (2016), who elaborate that multimedia is a form of technology which is used as a teaching tool these days. Thus, all tertiary education institutions in PNG are encouraged to embrace this change as part of the tools in their activity systems to facilitate their academic writing practices.

Online educational resources

One of the vital educational resources at higher education institutions is online educational resources. The students at University A emphasized that they search for information in the Internet, but the Internet service provided is poor and there is no active Wi-Fi on campus to access information for their assignments on their personal devices like smart phones and laptops. A student states, "The Internet is slow, and Wi-Fi is not working" (Year 2 Student 2, 26/10/2016: 11am). According to another

student, sometimes they use their own money to pay for data to access the Internet on their smart phones or to pay to access information for their assignments at internet cafés. The PNG University Review Report (May 2010) challenges these data. The Report explains that high quality telecommunications and modern systems of communication are essential for high university performance, and for keeping up with international thought and teaching. The Review Report data is consistent with Rena (2011, p.361) who mentioned that "higher education has been significantly impacted by globalization but institutions in PNG need to go further in making structural changes in response to it." This indicates that higher education institutions in PNG must adapt to the rapid growth of modernization and technology in the 21st century in order to provide the necessary supports to students in their academic endeavours.

Additionally, the tutors and lecturers agreed with their students that the Internet service is poor and most of the rooms do not have multimedia, which are their greatest needs. There were also other concerns raised in the interviews. One tutor elaborates, "Students accessing information on the students' server is another area that the administration has to look into to improve it because we don't have the resources to photocopy lecture notes and handouts for students" (Tutor 2, 24/10/2016: 11am). In addition, the participating academic administrators elaborated that the Internet and Wi-Fi service at the University should be readily made available to staff members and students. Smale and Regalado (2017) support that students need reliable Wi-Fi on campus, continued access to computer laboratories, increased access to charging and printing, robust training, timely support, and mobile-friendly academic software. These are relevant tools which are part of the University's activity system that aid students' academic practices which University A does not have any excuses to circumvent them.

Another major concern for University A is, accessing online databases. For higher learning institutions, their libraries act as repository or a storehouse of data where online information like electronic journals and other resources are kept (Gouhar, 2017). However, for University A, online database is a worrying factor. As one of the academic administrators confirms, "Database is really a need here. Our library does not have reliable links to databases, so we are unable to access online journals and other literatures" (Academic Administrator 2, 01/11/2016: 2pm). The participating academic administrators indicated that it is the responsibility of the current University Management to upgrade and increase the educational resources to contribute to students' academic writing success.

The concerns of online educational resources at University A are different from what is noticed at University B. According to the students at University B, they have sufficient information to write their assignments, and able to use online services like search engines, databases and Moodle, and discuss via online forums. A student states, "We have students' issued laptops with free Internet access 24/7 on campus so we can do our work" (Year 2 Student 4, 17/03/2017: 9am). Another student emphasized that most of the time, they do group discussions when forums are opened in the Moodle. This e-learning platform, which belongs to an e-learning category called LMS (Learning Management System) or CMS (Course Management System) makes learning more effective and efficient (Jackson, 2017; & Hosokawa & Watanabe, 2018). Another participating student states that through submitting

assignments using 'turn it in,' (in the Moodle) it also checks for plagiarism. These data suggest that Moodle and other online educational applications are readily available at University B in which they play crucial roles in students' academic practices and success.

In addition, the library at University B provides a conducive online learning environment. This is in line with one of the online graduate attribute policies of the University which states that graduates should have experienced the use of archives and libraries, and the application of a range of computer software, particularly software appropriate to their disciplinary area, and established receptiveness to the expanding opportunities for electronic technology. Additionally, the participating educators elaborated that they use Moodle to facilitate their educational activities. An educator states, "Moodle makes it different because you have this virtual cyber learning environment where you have to share all these PDF documents and share video and all these" (Tutor 1, 13/03/2017: 12pm). These data suggest that the use of Moodle and other technologies as tools in the University's activity system support both students and educators to effectively engage in their educational practices. This also supports Kuteeva (2017), who states that the development of modern or digital technologies like the Internet contributes to various innovative practices. So, with the availability of reliable and effective Internet service at University B, students and staff have the advantage to advance in their academic writing practices.

Teaching staff

There is also demand for engaging additional educators at University A. Two students indicated that there is need to employ more Associate Professors and Professors in various disciplines. As one explained, "I want highly trained and qualified people like Professors to teach me so that I want to learn the best" (Year 2 Student 1, 26/10/2016: 9am). Another student supports, "We also need Professors who are very well grounded in their field to teach us. We don't want tutors to lecture us" (Year 2 Student 3, 26/10/2016: 1pm). These responses imply that there are tutors lecturing when in fact, they supposed to be running tutorials. However, tutors are lecturing because there are inadequate specialized lecturers, Associate Professors and Professors at University A. Apparently, if the tutors are not lecturing then, who else is going to do the job? Hence, this is a huge challenge for the University Management. According to the University's Corporate Plan 2013 – 2017 and the University's Strategic Plan 2013 – 2017, part of its key focus area looks at constant appraisal of staff to ensure high calibre academics are available to provide quality teaching and learning. Unfortunately, the data suggest that the University Management has not been seriously responding to that policy which is a major concern.

The tutors and lecturers also mentioned that more specialized and highly qualified educators are needed at University A. As one of them states, "We also need highly qualified and skilled staff like Professors in all the disciplines to assist us in our courses and programs" (Lecturer 2, 24/10/2016: 3pm). Additionally, the tutors and lecturers expressed that the University Management should review all the changes that are taking place by creating more positions, bringing in more specialized and qualified educators. These are genuine concerns because universities are about writing

and that specialist forms of academic literacy[9] are central to everything they do (Hyland, 2013). Therefore, for successful 'disciplinary-based' (Starfield, 2007) academic writing to occur and to meet the expected outcome of this writing, it requires expert input from disciplinary-based teaching staff. That is, specialized educators who can teach the specialized contents of their courses or units and guide their students to learn and master the specialized vocabulary and concepts in their disciplines and use them correctly in their academic writing activity.

The academic administrators also admitted that staffing is a big issue. They emphasized that there is a huge increase in student numbers recently which has implications on resources. They highlighted that there is more workload for staff, and lack of quality teaching and marking done. The academic administrators agreed that there is demand for more Associate Professors and Professors to be employed to develop and run courses and programs at University A. One of them expressed that the University Management has to find money and fund more positions because if they want quality students to graduate from the University, then they need quality staff. These data suggest that the consequence of employing Associate Professors and Professors is to maximize the quality of education, courses and programs at University A. The findings correspond with the policies in the University's Corporate Plan 2013 – 2017 and the University's Strategic Plan 2013 – 2017. Part of the mission statement declares that the University aims to transform lives through its highly skilled and experienced staff and inspirational graduates. Additionally, one of the University's core values is to promote excellence in teaching. Therefore, it is crucial for the University Management to respond to these policies with support from all actors within the University's activity system.

Comparing the data from University A with University B, there are some mixed views from participants from University B concerning teaching staff. According to two students, their Departments have enough teaching staff to teach each unit whereas two other students indicated that they still need some additional teaching staff to share the workload of the current lecturers. Furthermore, three students emphasized that they also need specialized lecturers to teach them academic writing because the specialists will spot their weaknesses and strengths in academic writing more accurately and in greater detail and will know exactly how to address their specific academic writing needs. Another states, "I think if some additional staff can come and assist in the units, it will be ok because of the increased number of students. They will then, have enough time to attend to us individually" (Year 1 Student 2, 21/03/2017: 10am). However, five students anticipated that student number is manageable, and their lecturers do find time to communicate with each of them. As noticed here, there are inconsistencies exist in the data. With these mixed responses from students, it is proper to reassess the level of supports that they receive from their current educators. If the educators are not meeting their individual academic needs, then it will require the University Management to engage additional educators to share workloads.

The educators also felt that they need additional personnel to assist them. One of them said that last semester she taught four units and now she is teaching three. She explains, "But three units is still quite a lot. Four units is huge. So, in addition to all our tasks, a lot of people are overloaded" (Tutor 2, 14/03/2017: 11am). Another

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[9] Academic literacy involves reading and writing with theoretical mindset (Hyland, 2013).

interviewee adds, "If we want to set up a centre or offer some services, the University needs to adequately provide specialized staff to run or teach the curriculum" (Tutor 1, 13/03/2017: 12pm). The academic administrators also shared the similar sentiments. They emphasized that they have specialists at University B who are over-committed or overworked therefore they still require additional qualified educators to assist them. One of them elaborates, "We have recommended to the University Management to employ new specialized staff to assist us develop our programs. But it is taking slow progress and we don't know when we will have additional staff to help us" (Academic Administrator 1, 15/03/2017: 9am). However, he says, "One of the issues to get more qualified staff is that more pay package, that is beyond our capacity. It is an issue of financial resources, which is a problem" (Academic Administrator 1, 15/03/2017: 9am). These data suggest that University B does not have the financial capacity which is one of the vital tools that is affecting its activity system to employ additional educators, though there is current demand.

Conclusion

The findings revealed that educational resources like infrastructure development, curriculum and other educational materials, educational equipment, online educational resources, and teaching staff are important players in the activity systems of higher education institutions. However, for this study, the findings suggest that University A seems to struggle more to meet its academic writing needs in terms of the provision and availability of its educational resources compared to University B. Drawing from these findings, the higher education institutions in PNG are encouraged to upgrade their existing educational resources and include new ones to improve the quality of their academic writing practices and to produce expected outcomes. Further, actors in the activity systems of higher education institutions in PNG can elicit from the findings to address the challenges students and educators encounter by supporting them to successfully engage in their academic writing practices.

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