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## Interpreting Rich Pictures using Content Analysis

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# Interpreting Rich Pictures using Content Analysis

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## Abstract:

*Rich pictures have roots in soft systems and are widely used by practitioners to understand complex problems from many stakeholder viewpoints. This study uses rich pictures as a tool for collaborative drawing to explore international student experience in Scotland. Historically rich pictures are difficult to interpret and are often used to gain a holistic understanding of a system of concern and thus are disregarded in terms of providing in-depth qualitative data. We will explore the use of inter-coder content analysis to gain a deep understanding of group thinking. In the context of this study, using content analysis, our findings revealed a detailed understanding of Scottish culture and traditions from the perspective of international students. We determine that visuals have a vast capacity to communicate, irrespective of possible language, culture and education barriers, and thus offer unique insight into a complex system of stakeholder understanding.*

Key words: Rich Picture, Content analysis, Soft Systems

## Introduction: Developing perspectives through Rich Pictures

The rich picture (RP) is a familiar method used in soft systems to gather understanding about human activity for system design. The soft system approach came about due to the realisation that not all problems are clear cut and are sometimes, “ill structured and messy” (Khisty, 1993). Peter Checkland and his team in Lancaster developed the Soft System Methodology (SSM) as a way of analysing complex problem situations (Checkland, 1981). SSM can be defined as a socio-technical system methodology offering tools for analysing complex situations. This modelling approach identifies differing worldviews of the system by encouraging discussion and debate initially through a tool called the RP. The RP has been applied in many different fields, both in academia and in practice and is seen to originate from Checklands work in the mid-70s on Soft Systems. The RP lies at the heart of Checklands human activity system illustrating how people are involved in the system. There does seem to be a division in academia (Bronte-Stewart, 1999) on what the RP is. Whilst some suggest the RP is a process others advocate it is a tool and for some it is seen as a technique, method, expression or a devise.

The RP assists the exploration of different world views within a complex situation. The RP is a physical picture drawn by a variety of hands which encourages discussion and debate for groups and allows them to arrive at an agreed understanding. This makes it a powerful device in participatory processes. RPs consist of a set of entities we call icons (Bell et al, 2016). Icons can represent objects or processes such as action or emotion. The RP is not rule bound in facilitation, form or content and creators are encouraged to add their own subjective interpretation to the picture. The RP expresses, via a symbolic language, and aids group understanding by initiating problem investigation in a permissive environment. RPs have the capability to recreate in the present what has happened in the past and represent the now whilst offering insight into the future. The RP can add extra dimension and a level of truthful tacit understanding that might not be available through other methods of group investigation. The collaboratively drawn RP offers a group consensus rather than an individual opinion. Academic literature is replete with examples of the RP being used in situations away from its roots in system design from nursing (Ballard, 2007), social care (Fougner & Habib, 2008), internet

security (Just & Berg, 2017), construction (Mazijoglou & Scrivener, 1998), creativity (Proctor, 1995) landscape visualisation (Boedhihartono, 2012) and engineering (Sutrisna & Barrett, 2007) to name just a few of the instances where they emerge.

The RP is the outcome of an analytical process by a group of people. The RP thus reflects thoughts, feelings and beliefs that are present at the time of drawing. It might not capture all the discussion that the group had and does not explain why things may have been included or left out. To date, RPs have been seen mainly as an enquiry or discussion aiding device and its real usefulness expires after completion. However, we know from previous research (Berg, 2013) there are narrative stories with unique iconography in RPs. But we wish to go further than that and propose the idea that RPs can be analysed so as to tell us something about the thoughts of those that make them. We believe the RP that could tell us a lot about the dynamics and mind-set of those composing the RP. The RP is so much more than a series of process, structure and relationship outputs and therefore, to interpret both soft and hard facts, an appraisal method need to be holistic as well as deconstructionist. By this we mean, it is only possible to understand certain formal information when taking the RP apart. However, looking at the whole picture gives a more comprehensive view which can highlight the more subtle, soft or tacit messages or nuances.

*\*Please note that the purpose of this paper is to highlight the use of content analysis for interpreting rich pictures. The study, as discussed in the following section, is our vehicle to show readers an interpretation process and thus the study topic is less important here than the methods used. The complete and detailed findings of this study have been written up and are under review in the International Journal of Higher Education Research.*

### **Study: Using Rich Pictures to understand international student transition.**

In this study we were investigating international student transition in Scotland. For many students, the move from study or work in their home country into higher education in another country is a major life change involving adjustment to their geographical, financial and social circumstances. This transition has the potential to cause great concern and stress with many having difficulties with language barriers and social interaction whilst for others the challenge is to understand and integrate into a new culture.

International students are an important revenue stream for universities across the world. A report by the Higher Education Statistics Agency (HESA, 2016) stated that in 2010 Universities generated £37 million from tuition fees in comparison to now more recently whereby figures show money generated by fees from international students and those from the Rest of the UK (RUK Students) is now in excess of £94 million. Recent HESA research revealed that in the past year there has been an increase of two per cent more Chinese students, three per cent more American students and eight per cent more Malaysian students studying in Scotland. Knight's (2004, p25) early and often quoted definition of internationalisation as 'the process of integrating an international, intercultural or global dimension into the purpose, functions or delivery of post-secondary education' has become universally accepted. However, Yemini, (2015) argues that concept of internationalisation needs further definition in order to avoid the negative implications linked to neoliberalism due to the incorrect interpretation of its meaning by higher education institutions. The scope of internationalisation now seems to be concerned with maintaining and developing a cultural and education identity of the local campus environment whilst attempting to be inclusive to newcomers from abroad, opening up new

learning, teaching and research opportunities with a global ‘perspective’ (Berg & Guion Akdağ, 2016).

**Research Question:** What are the experiences, enjoyments and challenges of the international student community studying in a Scottish university? The objectives of this research are to have a deeper understanding of social, academic, economic, and cultural issues affecting international students studying in Scotland and a more nuanced understanding of the quality and commonality of relationships formed in cross-cultural encounters in Higher Education.

Three universities in Scotland were selected for the study as they presented a good institutional representation of central Scotland offering a wide selection of degree subjects to a diverse population of international students. Each university hosted RP workshops which were facilitated by the same facilitator every time. Appropriate ethical procedure and consent were applied throughout the project with all participants being anonymised. 71 international students placed within 16 groups across 5 workshops were asked to draw their experience of transition. The students came from a wide spectrum of countries with the five most common locations being China (42%), Europe (24%), Saudi Arabia (8 %), Malaysia (7 %) and USA (6 %). The student group we investigated consisted of international students studying either an Undergraduate, Postgraduate or PhD degree. Some of the students were on a year placement from their home institution whilst others were participating on a pre-session course prior to starting their post graduate degree

At the beginning of the study we identified four key themes for investigation; social, academic, economic and cultural themes of studying in the UK experienced by international students. The four themes helped to provide a framework for identifying repeating elements (both pictorial and spoken) found in the RPs. It should be noted that many of the icons across all 16 RPs have been coded as having crossover themes and thus some icons fall within two, if not three, of the themes. This is discussed further in the methodology section below.

## Methodology

### Recruitment:

We recruited student participants by advertising extensively to the international student communities in 3 Scottish universities. We invited students to attend a rich picture workshops in February 2016 to discuss their experiences of being international students. An international student as defined in this study is a student whose home is outside of the UK, this includes European students and also students with English as first language from outside the UK. Participants registered directly on an online scheduling poll. Students who participated in the study were compensated for their time with an online shopping voucher.

### Workshop process:

Students participated in one of the five, identically run, 4 stage workshops. Table 1 shows the stages of each workshop. In stage 1, the participants read a short project description and signed a consent form. They were sorted, by the facilitator, into small groups of 3/4/5; group size depending on workshop attendance. In stage 1 the facilitator gathered information on country of origin, and gender. In stage 2 the facilitator (same person for all 5 workshops) introduced the purpose of the workshop and presented the research question; what are the experiences, enjoyments and challenges of an international student community studying in a Scottish university? To stimulate input, we made a few suggestions on areas the groups might like to

consider such as academic expectations, home and social life, people that matter to you and plans for the future. Participants were asked to respond to the question by drawing their answers in pictures on a single large flip chart sized paper with a variety of coloured pens. Examples of previously drawn RPs, from an unrelated project, were shown to the groups to illustrate the lack of art skill required by the group.

Stage and Activity
1. Consent and group formulation
2. Introduction
3. Rich picture drawing
4. Group explanations of the RP

Table 1 Workshop stages

In stage 3 each group drew their collaborative RP on the single sheet of large flip chart paper. An example of one of the group RPs from workshop 3 is seen in figure 1. It is worth noting that a RP is drawn by many hands accessing the paper from different angles thus, to read the picture, one must rotate the page. In stage 4 the facilitator asked all groups to gather beside their RP, which was hung on the wall beside them. Each group discussed what they drew and why. Stage 4 was facilitator lead with participants being encouraged to share their stories and expand upon their drawings with words. The discussions were audio recorded and later transcribed.

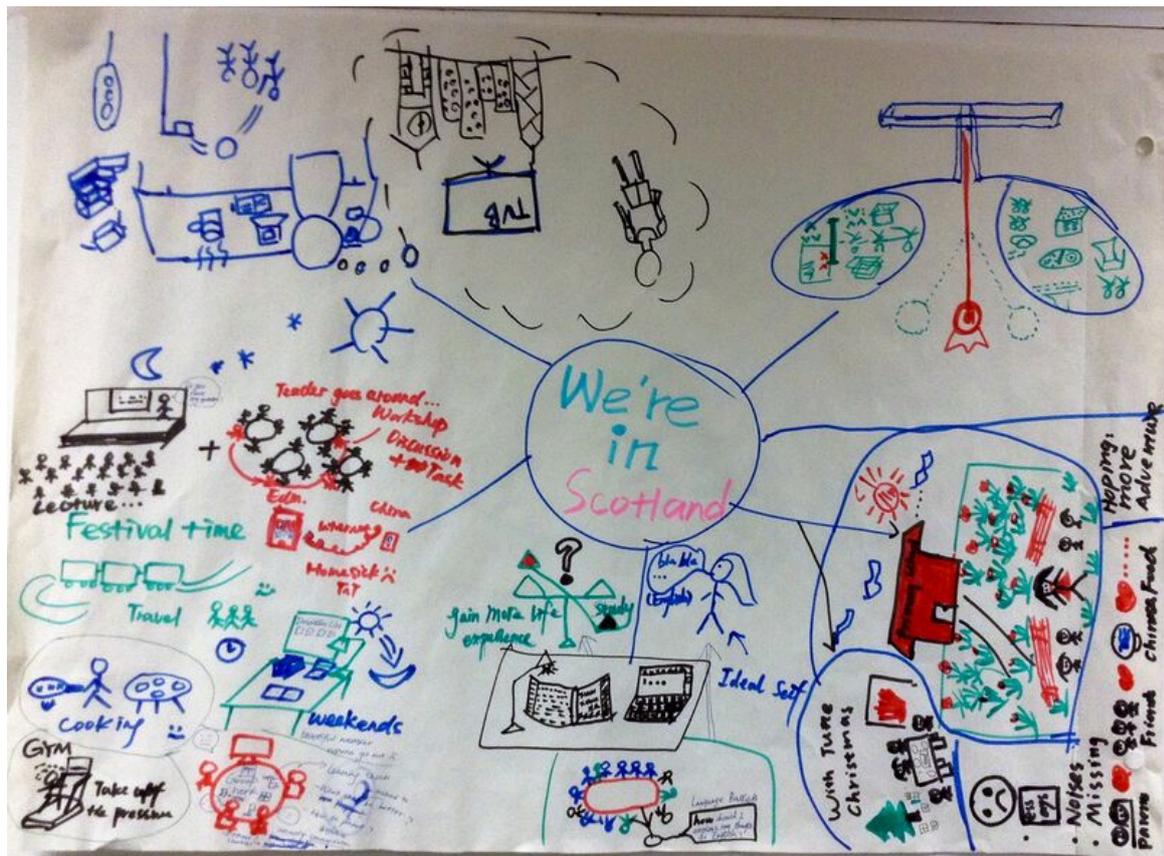


Figure 1 : RP example from Workshop 1

## Data Analysis

In total, five focus groups took place at three universities. Initially there were to be 3 workshops, one at each university, however small participant numbers at university 3 necessitated the need for further workshops.

Institution	Workshop number	Numbers of Rich pictures drawn	Participant numbers	Gender split
University 1	1	5	25	2 M/23 F
University 2	2	4	19	7 M /12 F
University 3	3	2	8	2 M/6 F
University 3	4	2	8	4 M /4 F
University 3	5	3	12	7 M/ 5 F

Table 2 RP workshops

In total, 16 RPs and the corresponding transcripts were analysed using content analysis (CA). CA is concerned with analysing the content of qualitative (non-numerical) in contrast to statistics which are characteristically applied in analysing quantitative (numerical) data. Bell et al (2016) propose that RPs can be analysed in order to tell us about the dynamics and mind-set of those composing the RP. Content analysis is widely used in the field of social science and this research proposes to explore through CA the similarities and differences within the RPs.

Five coders were employed to analyse the pictures and transcripts. The coders were final year students of the Information System programme in university 3 and they were all knowledgeable of the RP method. The coders firstly transcribed the stage 4 group discussions. They then individually assessed each picture for initial understanding and inter coder reliability (Lombard et al, 2002) before discussing with the other coding group members. The coders were given limited instruction and were encouraged to apply their own analysis system of coding to the pictures. They adopted a grounded theory approach (Glaser, 1967) with inductive content analysis (Lombard et al, 2002). Using colour coded stickers and a numbering system the coders analysed every RP in great detail. The transcripts from every group were coded, numbered and matched against the corresponding picture icons in the RPs. All RPs were coded using the same system with four core themes being identified as repeating common occurrences across all RPs. The four themes are social, cultural, economic and academic. The coders identified within these themes as repetition fell broadly in these key areas. For example, when the coders saw icons relating to study, and education they coded these as academic and similarly if coders saw icons relating to meeting with friends then they coded as social. The coders determined that the theme cultural meant pictures that displayed icons such as local landmarks, traditional food, local laws and environment such as weather and nature in Scotland. The Economic theme was applied when the coders saw icons relating to money, expense and currency conversion rates. Coders also noted when an icon was displaying a negative or positive emotion. Emotion was often displayed through a facial image and thus simple to interpret when matched to the transcript.

It should be noted that many of the icons across all 16 RPs have been coded as having crossover themes and thus some icons fall within two of the themes. For an icon to be coded in a theme all 5 coders needed to be in agreement. If disagreement occurred, often by coding an ambiguous/ multi-dimensional icon, then the icon was either not coded or it was coded as a majority group assumption. For the purposes of this paper we will disregard all assumptions. Table 3 provides a summary of the repeating icons where correlation of emotion was repeated;

for example, there were nine instances where an icon displaying weather was drawn and described as negative.

Repeating icons	Repetitions out of the 16 RPs	Coded Theme	Correlation	Workshop & Rich Picture
Studying/High Workload	11	Academic	Negative	1a, 1b, 1c, 1d, 1e, 2b, 2c, 3a,4a, 5b, 5c
Weather	9	Cultural	Negative	1a, 1c, 1d, 1e. 2b, 2c. 3a. 4a, 4b.
Cooking/Food	9	Cultural/Social	Neutral	1a, 1b, 1c, 1d, 1e, 2b, 2c, 3a, 3b
Sight Seeing	8	Cultural	Positive	1a, 1b, 1c, 1d, 2a, 2b, 3a, 5c
Expensive Economy	7	Economic	Negative	1a, 1d, 1e, 2c, 2d, 3a, 4a
Missing friends and family	6	Social	Negative	1a, 1e, 2c, 2d, 5a, 5c.
Exercising	6	Cultural/Social	Neutral	1c, 1d, 1e, 2b, 2c, 2d
Nature	5	Cultural/Social	Neutral	2b, 2c, 2d, 3b, 5b
Socialising with Friends	5	Social	Positive	1b, 1c, 1e, 2a, 2c
Loneliness	4	Social	Negative	1a, 1d, 3a, 4a
Accents/Language Barriers	4	Cultural/Social	Neutral	1b, 1d, 2d, 3b
Travelling	3	Cultural	Neutral	1c, 1d, 2c.
Haggis	3	Cultural	Neutral	1a, 1c, 3a
Shopping	3	Cultural/Social	Neutral	1d, 1e, 3a
Balancing Studying	2	Academic	Negative	1b, 1e

Table 3 Icons Analysis

## Findings

Through analysis of the RPs and cross coding with the corresponding transcripts the following icons emerged as prevalent within the pre-agreed framework themes; social, academic, cultural and academic. Across all 16 RPs the coders identified 465 icons within the four themes. Figures 2 and 3 provide the data in chart form. As previously stated the coders made agreed assumptions on many of the icons however this is not empirically proven data as there was no transcript discussion, during the drawing stage, to verify the exactness of meaning. In this paper we only focus and discuss the transcript confirmed icons ie the icons in which meaning is confirmed by the oral after picture group description.

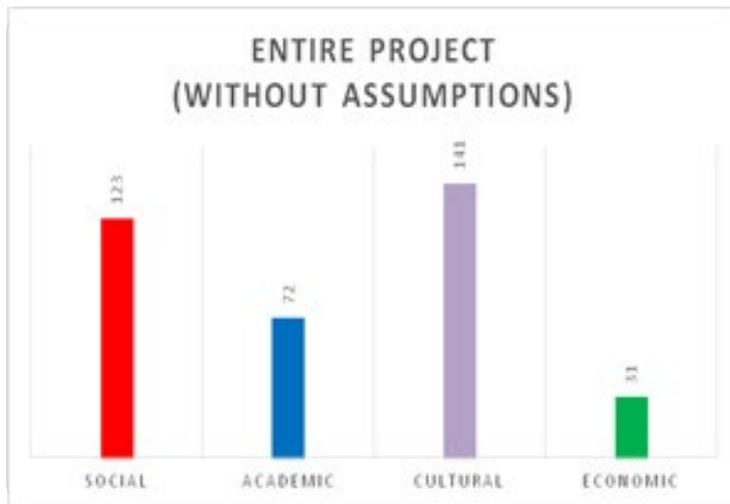


Figure 2

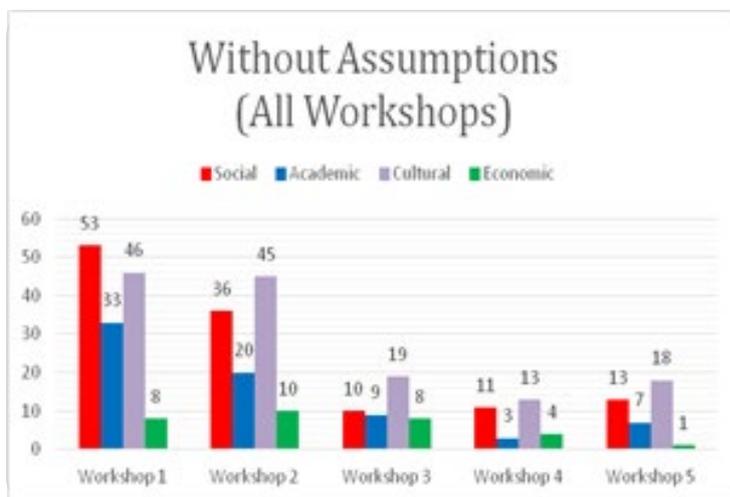


Figure 3

In the following section examples are presented of the commonly drawn icons and the voiced statements within each theme. However, it should be noted that all four themes overlapped considerably, and many icons were coded across one or more of each theme. For example, a social theme might overlap with both culture and academic themes. The transcript codes show the workshop and RP of the conversations, for example '[w1,RPb]' would be workshop one with picture b of that workshop.

\*Note, due to constraints of publication it is not possible to provide examples of all 16 rich pictures referred to below however we can provide these to readers upon request. Where relevant we have provided examples of iconography of certain RPs.

## Social Themes

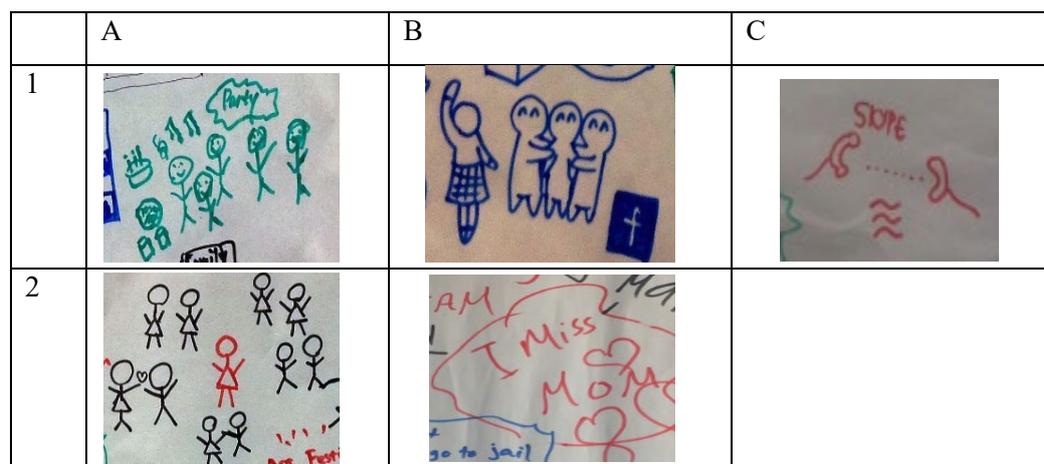


Figure 4

Coders classified the icons as ‘social’ when they depicted scenes of socialising, collaboration and communication or lack of such scenes. Group communication was commonly drawn depicting students enjoying social events (figure 4 B1). Sharing food was a common reoccurrence (table 3) however had mixed emotions attached to the action; *“and sometimes we have party and cook a meal with my friends”* [W1,RPa] whereas others showed negative examples of eating in isolation, *“I live on campus, no one comes out and leaves their door open...my kitchen mates will make food and then hide in their rooms and eat it, it’s weird”*. One to one communication had icons of telephone calls commonly depicting calls to family and friends back home however there were issues with time differences, *“Eight hours’ time difference from Edinburgh to China, usually I cannot connect in the evening”* [W1,RPd]. Isolation and loneliness was very apparent for international students ( figure2, B2); *“I miss my hometown so sometimes I feel lonely”* [W2,RPb], *“I miss my parents and my best friend”* [W5,RPc] and *“Leaving your family ,leaving your friends, and leaving them is not necessarily very easy[W2,RPa]”* Many students had difficulty with socialising with home students, *“I’ve found a lot of people here are really nice on a superficial level but it is difficult to form deeper friendships with people, they are quite reserved”* [W2,RPa.] A common problem across many of the RPs was with the Scottish accent, *“Another thing is the accent, I’m not very good at English so I must pay attention to the academic language and oral language, it is very difficult for me”* [W2,RPb] and *“The bus driver speaking to me in some weird language that I cannot understand”,* [W3,RPb] *“Scottish accent very strong”* [W3,RPa]. For many the speed of speaking caused issues with understanding, *“I found communication barriers and the first one I done is the speed of the speaking is just too fast for me”* [W2,RPb]. Unfortunately for some the communication barrier hindered all communication, *“I also have to come across question that how to express my thoughts in English, sometimes I just keep silent”* [W1,RPb] However, for others, Scottish communication traits were voiced, *“Scottish people in Edinburgh are like stand-off-ish, like it’s hard to approach somebody in class so you’re better talking to someone who looks Asian....its very lonely, I have no one to go to”* [W3,RPa].

One students spoke of subconsciously mimicking the accent, *“After drinking for several nights your accent turns into a Scottish one”* [W2,RPd]. Alcohol related icons, specifically related to Scottish culture are further discussed in the cultural theme section. Some students noted the lack of night life in Scotland compared to what they are used to, *“People here have no night*

life because people are often focussed on staying in with family and are very keen for exercise” [W3,RPa], “Life here is quite boring....totally different than Asia” [W3,RPa]. In the social theme a repeated and negative (table 3), icon was one of loneliness and isolation (figure 1, bottom left), “I’m from China and I fly to Scotland, I always be alone, I cook alone, eat alone and go to school alone” [W1,RPd].

## Academic Themes

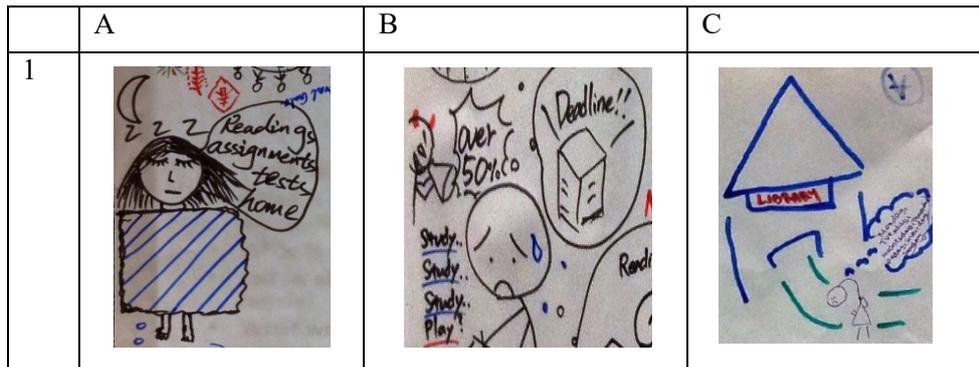


Figure 5

Many students discussed and drew icons regarding the benefits of being an international student, “British universities are really global so that’s what I like about them, you can meet more people from all around the world” [W3,RPb]. However, the icons associated with academic life and study were largely drawn as negative (table 3), there was strong emphasis on students being overworked, exhausted and highly concerned with assignments and exams (figure 5, A,B,C). Examples of text were, “I just wake up and spend a day and a whole night to workout my assignments, deadline is nearer, basically horrible academic life here” [W2,RPb] In figure 35 (1B) there is a professor being depicted as a devil shouting demands on the student. The corresponding transcript states, “the professor torture us “[W1,RPa]. Many of the students in this theme drew and discussed their concerns with fully understanding their teachers, “Culture shock, yes, when I listen to lecture speakers speaking sometimes I cannot catch up with his speed so I use a lot of time to think and to guess he or her meanings” [W2,RPb] however there was one student that offered a solution to this problem, “I’ve got a conclusion, if you don’t know what this is you should ask, so I want to be a good asker” [W2,RPb]. The balance between social and study was often depicted, “It is very hard for me to balance social life and academic life” [W1,RPb] with some students describing academic study using a mountain metaphor, “like a mountain climbing activity so we are always some point like ups and downs, sometimes at the peak, sometimes down the valley” [W1,RPc]. In one workshop a student complimented their university on the pastoral care service, “I like how there is a mentoring programme” [W3,RPa] while another in a different workshop noted issues regarding international exchange students, “There is no exchange group....there is no organised trips for exchange students, it’s not very good” [W2,RPc].



Icons that were categorised as cultural were the most common icons that were drawn across all 5 workshops. Three of the workshops drew icons relating to international student visa requirements. Figure 7 ( figure 7, 2C) depicts one such icon , *“Police say if you don’t follow the rule of the country then you will go to jail, so there is a lot of uh rules made in the UK”* [W5,RPc] and other students said, *“If you can’t get a visa then you can’t stay”* [W2,RPd] and *“I drew a visa because I am very aware of the restrictions that I have in travelling around Europe”* [W3,RPb]. All of the RPs gave positive examples of Scottish countryside and historic places of interest ( figure 7, 1A& 2B). For example a student stated, *“I draw castle because there are castles everywhere in Scotland”* [W3,RPa]. Many of the students drew pictures and discussed the culture of drinking of alcoholic beverages in Scotland, *“There is a lot of whisky here, everyone drinks a lot”* [W2,RPc] whilst others discussed local soft drinks, *“Iron-Bru , I’m not a fan, it tastes like orange soda”* [W2,RPc]; *“No good coffee, the coffee is terrible”* [W2,RPc]. Local food was discussed in many of the pictures with mixed results; *“I don’t like the food here”* [W2,RPc]; *“Haggis, “it tastes quite good but looks bad”* [W3,RPa]; *“The food is really really nice but it is sort of limited, they don’t have too many vegetables here”* [W3,RPb]. One student found that there was a high regard to food expiry dates, *“People buy a lot of food in the supermarket but they also very emphasis on expiry date”* [W3,RPa].

Some students found differences in local facilities, *“Something that hit me is the different faucets that they have, one is for hot and one is for cold, so one is like ahh burning and the other is really cold”* [W2,RPa]. Local transport was received well by the students, *“The buses here are on time, the public transport system is good”* [W3,RPa]. Local fashion was also mentioned, *“A lot of people where tee-shirts in the winter when it is snowing.....People don’t feel the cold here”* [W2,RPb]; *“I can wear the tank top in Hong Kong but I don’t, I didn’t even bring it to the UK”* [W1,RPb]. In every workshop the Scottish weather (figure 7, 1B/C)) was mentioned in a negative capacity; *“It rains, it’s insane, the wind”* [W2,RPc] *“for some of the girls we have hair problems.....because of the rain”* [W1,RPd]; *“weather is always unpredictable here so if you have an umbrella in Scotland it is always a good idea”* [W2,RPd]; *“the winter, I hate the cold, I hate the rain. I am from Africa and I’m used to a free spirit and unity. Here I have to bundle up in jackets and I’m not used to it”* [W3,RPa]. Many students drew positive icons relating to the countryside, mountains and lochs in Scotland with one student stating, *“I love the trees and canal in Edinburgh”* [W3,RPb].

## Discussion

The data derived from this research is both valuable and diverse. In scholarly research, hand drawn pictures can be challenging to present as empirical data however when both pictorial and spoken description can be analysed simultaneously, by a team of independent coders, then the information derived from such data becomes original, explicit and authentic. The research question (page 2) asks, “what are the experiences, enjoyments and challenges of the international student community studying in a Scottish university”. We determine that the pictures and verbal communication have provided a unique insight into this question. The following section examines the findings identifying the experiences, enjoyments and challenges across all four themes.

In Table 2 we can see that there were eleven instances (68.5%) within the 16 RPs where students drew pictures regarding academic workload. Examples as shown in Figure 5 provide some of these pictorial narratives. Their associated verbal stories evidence the tension, anxiety

and stress students face when considering academic work. There were very few instances where students showed positive experiences of academic study which is possibly not surprising as the timing of this study was conducted early in a semester term time and students might not have received feedback or grades regarding their work. Negative correlation with Scottish weather was a strong aspect of discussion and drawing throughout many (56%) of the RPS. Students noted the challenges the changeable weather systems created. Sunshine was seen as a rarity in Scotland although it should be noted that the study was conducted in late winter and many of the students had not experienced a full year in Scotland. Other challenges which students demonstrated as challenging were more personal. Loneliness (25%) and missing friends and family (37.5%) were coded as having emotionally negative icons and verbal descriptions. It was clear that international students can find it difficult to be so far from home, family and friends and being in a new country can be a lonely experience, however, our study also found a positive correlation with icons relating to socialising and friends (31%). 44% of students drew emotionally negative pictures relating to the high expense of living in Scotland.

There were five instances of double theme coding between social and cultural themes (table 2). During analysis the coders found it difficult to distinguish between two of the themes for certain icons. For example, Cooking and food was coded as both social and cultural and drawn in 56% of the RPs with no noticeable emphasis on a positive or negative correlation. In fact, throughout the other four instances of double theme coding there is a similar neutral correlation suggesting there is no predominantly negative or positive emotion being presented. Thus, what we can determine is that food, exercise, language, nature and shopping are all remarkable, being worthy of comment and imagery, but they are not highly emotive experiences or challenges for the international students. Sightseeing in Scotland was a popular (50%) and positive repeating representation. Eight instances over the 16 RPs portrayed students enjoying mountains, lochs, castles and monuments.

Perhaps, if we might be indulged, the most iconic and memorable group narrative within this study was Figure 8. Here we see the group describing the divide between British and International students. The corresponding transcripts indicates the challenges this division creates, *“Here the picture shows that even though we are in the same boundary, same region, same university, same student essentially, physically together, international and British students there is a division. Um and that division comes from language, culture, history, tradition. That causes international students to stick in their own groups and you can see that in classes as well. Very clear difference between British students from inside and international students from outside when working in groups”* [W2, RPa]

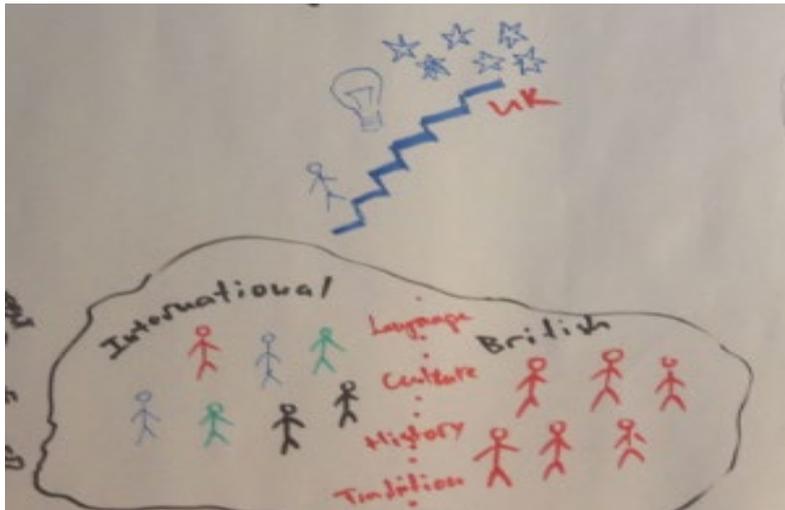


Figure 8

Figure 8 challenges for the international student studying in the UK

## Conclusion

To summarise, we have identified experiences and challenges of international students studying in Scotland through the RP method of enquiry. Our method of content analysis interpretation involved independent coders analysing the icons and transcripts to determine themes within a framework. This method of interpretation provides an opportunity for deep analysis of icons and group discussions to identifying instances of participant repetition both within and across themes. From this research, we demonstrate that the RP offers a unique platform for visual data capture within groups and thus, due to its rule-less structure, allows for a variety of experiences, concerns and narratives to be explored. We suggest that through deep analysis of the RP one can gain better understanding of stakeholder representation and accurately represent their realities in both diagrammatic and narrative form. In this study we analysed the RPs alongside the recorded post-picture discussion (where each group explains what they drew and why) using CA. The audio transcript helped to identify patterns from the pictures which might have been impossible to determine their meaning had there not been an oral description.

We suggest that visuals have the vast capacity to communicate irrespective of possible language, culture and education barriers however our interpretation method using content analysis is involved and specialised. We acknowledge that coding rich pictures is a lengthy and possibly expensive process which incurs a commitment of content data analysis from many coders (five coders in our study). Rich pictures are a good method of enquiry and can be equally used to gauge a 'temperature' or holistic understanding from stakeholders and in addition be analysed to gain a much more in-depth understanding of the situation under investigation. The RP is an analytical tool used to draw out tacit knowledge and beliefs of those who seek to understand their problem situation of system concerns. Such knowledge could be relationships, perspectives and undiscovered belief systems. In essence, we seek to explore maximum learning potential from the RPs and the process by which they have been facilitated analysed and disseminated.

## Acknowledgements

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